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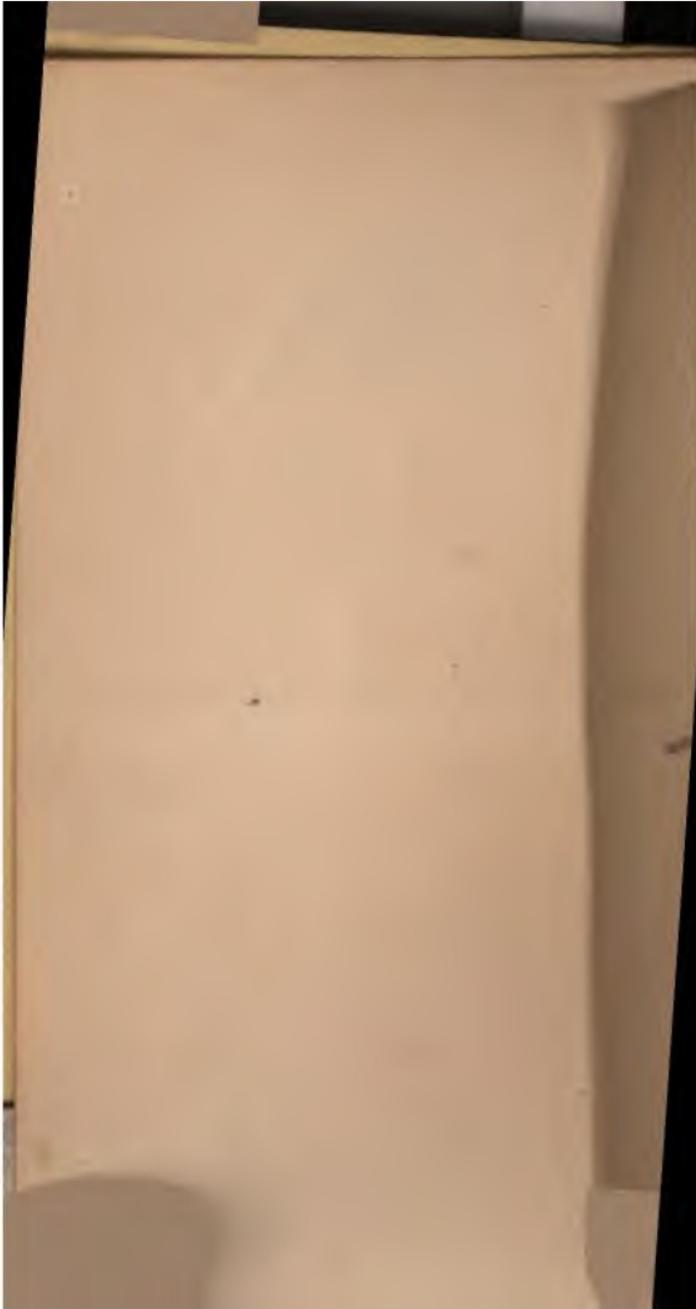
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THE
HAND-BOOK OF BATHING.

BY

THE AUTHOR OF THE "HAND-BOOK OF THE TOILETTE."

L O N D O N :

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PREFACE.

I OFFER no apology for presenting this little volume to public notice. I have written it, because no one else has considered the subject of sufficient importance. It would certainly have been preferable if some writer, with better qualifications than I possess, had undertaken the task. I have, however, done my best. Being in the habit, for a number of years past, of frequenting most of our principal bathing-towns on the sea-coast, and of observing the grievous mischief arising from the mistakes into which sea-bathers usually fall, I have endeavoured, in the following pages, to point out to them a route less objectionable than the one which they now habitually pursue. I have no personal interest in the matter, having neither a reputation to gain, nor a professional connexion to form, nor

any pecuniary object to carry. Even my name is unknown and shall remain so. If this little book prove useful, it requires not the support of a name : its utility will insure its success. If it be rejected as worthless, neither in that case will it be necessary for the writer to raise his mask and show his face.

I shall not, I trust, anonymous though I remain, incur a charge of egotism for having throughout employed the pronoun **I**. The modest pretensions of my little volume would not justify the use of the dictatorial **WE**. I may add, that as I pursued the humble occupation of writing it, I would fain have fancied that I was uttering a familiar lecture to an assemblage of pupils and friends.

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A
FAMILIAR TREATISE
ON
SEA-BATHING.

CHAPTER I.

NECESSITY OF BATHING.

ABLUTION of the surface of the skin is conducive to the health of many of the inferior animals of the warm-blooded species, as well as to man. The beasts inhabiting the deserts, like those bred in domesticity—the birds which freely range the air, like the poultry of the farm-yard, are governed by an unerring instinct, which they surely follow in this as in every other of the physical duties and performances of life. But man, with his volition under the guidance of reason—with his boasted knowledge—with the “appliances and means” which he can command, frequently neglects the practice of ablution, to live in his own filth, and suck up from it those germs of disease engendered by the absence of a cleanly body.

In countries near the equator, where the excessive heat of the climate gives a more rapid development to the evils arising from a neglect of the bath and of a proper friction applied to the skin, the observance of these means of health and comfort has been engrafted by wise legislators upon the popular forms of religion, and thereby made an obligation to the multitude, who, ignorant of the physical benefits they derive, are thus brought to combine these benefits with the higher feelings of religion. Superstition is the term which has been applied to these observances so joined to spiritual matters; but if the term be rightly applied, then it is surely an excusable and even a praiseworthy superstition, which could cheat men into habits so necessary to their physical well-being. In the present days of enlightenment, when the human mind is expanded almost as far as it can stretch, and the pure gospel of the Saviour separated from that smoke-dried crust of ignorance and fanaticism which the passions and prejudices of the darker ages had fastened upon it, would a man be looked upon as holy and good who should neglect his social duties, dwell upon the summit of a barren rock, macerate his flesh, and wallow in filth like a hog, or like the cynics of old? Could such a man, in our times, be revered as a saint? No: he would be considered and treated as a madman. And yet they who accuse of superstition nations who wash their bodies from a sense of religious duty, concur in regarding as saints men who, in less enlightened ages

thought to win their way to heaven by a separation from everything earthly,—by the neglect of every social duty enforced on man by his God, by inflicting upon themselves, like the Hindū fakheers, unnecessary physical torture, by enduring the diseases arising from uncleanness, and by performing the most disgustingly filthy actions, as penance and humiliation.

We are told that “cleanliness is next to godliness;” and there is no doubt that this saying is founded upon the practices and observances of our Saviour himself. The whole context of the Gospels leads us to infer that the Divine Jesus was always well clad, and never neglectful of those frequent ablutions necessary to man’s health; whereby he not only followed what the Jews practised before he “was made man,” but set an example to mankind on a point of no small importance to their physical welfare and comfort. Thus, then, however many of the saints in the calendar may have despised these practices, the use of frequent ablution may as easily be traced to the Divine Founder of Christianity, as to the later precepts of Mohammed, or to the earlier ordinances of the heathen lawgivers who lived prior to the coming of the Messiah.

In most of the countries of Christendom, the maxim that “cleanliness is next to godliness” is followed out, by washing the skin in warm water. In every great city in Europe, nay, in every town and village, public baths are erected to suit the means of all classes of society. Even in Russia,

where serfage* still prevails, the very serfs use the warm bath every week, each man rubbing the skin of his fellow, whilst under the operation of the bath, with a piece of matting. In these countries the governments take the care of the public health into their own hands, and cause, under the direction of a permanent medical board, every necessary facility to be given to the people for the preservation of health, comfort, and cleanliness.

It is much to be regretted that this is not the case in the British isles. The Scotch and Irish are taxed by the English with a want of cleanliness in their general habits. How far this imputation is justified, I need not stop to inquire. But the people of England have assumed, I may say usurped, the reputation of being the cleanest of nations. As such, they affect to despise the dirty habits of the French, and the Italians, and especially the Russians,—to say nothing of their own compatriots, the Scotch and the Irish, who assuredly deserve their censure, but between whom and the English there is not so much difference in real personal cleanliness as these latter pretend. In sad and sober earnest, the English themselves are much less cleanly about their persons than either the French, the Italians, or even the Russians whom they place almost out of the pale of civilisation. The English are habitually well dressed;

* Slavery: the serf being sold with the soil, which he is unable to quit without enfranchisement by the emperor, who is the sole fountain of freedom.

and every Englishman, above the operative classes, generally appears with a clean face, clean hands, and the finger-nails carefully cleaned. The other parts of his body, except his feet, which are washed at distant intervals, seldom, if ever, feel the comfort of ablution. The bodies of the generality of Englishmen are never washed, but are covered with epidermal incrustations of years' duration. Even those who seek recreation in swimming, either in the muddy Serpentine or in any other river, become not a whit the cleaner for such immersion, because cold water cannot sufficiently act in so short a time upon the accumulation of coagulated perspiration and epidermal scales. Friction is seldom applied, or, if it be used, it consists only of a gentle wiping with a towel. In most cases the shirt is put upon the wet skin, a practice *said* to be the most wholesome.

In the British metropolis, and in all the great towns of the kingdom, the very poorest classes, clean though they often are in their dwellings, are not only subject to cutaneous eruptions, and vermin, the effect of their hydrophobia, but are frequently attacked with very acute stomach diseases, which shorten their lives, and reduce the size and vigour of their descendants. In Scotland and Ireland, where there is less of cleanliness and comfort in the houses, where dirt and foul air are allowed "to revel undisturbed," it is much worse. The cant term of "Scotch fiddle," given to that most infectious disease of the skin, the itch, would indicate that it is very prevalent in Scotland. It

is, however, not less so in Ireland ; and in both countries it arises from filthiness of body, joined to filthiness of habitation. To this complaint, which is less frequent in England, owing to there being more cleanliness in the dwelling-houses of the poorer classes, may be added the various others already alluded to, and likewise the vermin, which never attack the bodies of the cleanly.

In the cities and towns of France, cutaneous diseases arising from want of general bodily ablution, are much less common than with us, because the poorest of the operatives enjoy, from time to time, the luxury of warm bathing. Neither are vermin on the body so common at Paris as in our metropolis, being rarely found except upon the houseless and destitute, who mostly live by mendicancy. By the existing laws of France, begging, as with us, is a punishable offence ; and to so nice a degree is the sanatory system now carried in that country, that when a mendicant is committed to prison, he has the immediate comfort of a warm bath and friction, after being anointed with a preparation that kills the vermin which have fixed their "local habitation" on his body. The bath is repeated at proper intervals during the whole period of his incarceration. After the first general ablution, he is clad in the prison habiliments. If the rags he wore on his entrance are worth preserving, they are boiled, purified of vermin, and restored to him when he leaves his place of *durance* ; if wholly worthless, they are carefully destroyed with the vermin they contain. The

consequence of such a system is that the mendicant always emerges from his confinement in better health and condition than when he began his captivity; and it is a well-authenticated fact that, among this class of prisoners, obstinate chronic diseases have been wholly eradicated by the use only of warm water and cutaneous friction, and many helpless and infirm mendicants restored to health and to the power of working for their subsistence.

Among the negro tribes in Africa, the difference in longevity and muscular power is very perceptible between those who bathe and rub their skins, and those who retain, with their dirty and offensive habits, an antipathy to water. The latter are never free from cutaneous diseases, among which elephantiasis and leprosy are the most prominent; and their lives are reduced to a comparatively short space. This difference must have been observed by any one who, at the Cape of Good Hope, has seen and compared the races of the Hottentots and the Caffres. The former, with their vermin and their grease, and their necklaces of animal intestines often in a state of decomposition, and their perfect innocence of aqueous ablution, are as disgusting and offensive as they are unhealthy and deficient in intellectual development. The latter are a cleanly, muscular, intelligent, long-lived, and healthy race, who, were they worthily treated, and the horrible system of commandoes * abolished, to which British govern-

* Armed expeditions.

nors unnecessarily resort on the most trivial occasions, might be made the vehicle of disseminating civilization throughout Southern Africa.

Let the argument be further illustrated by turning to America. The red Indians who inhabit many parts of that vast continent, especially the temperate regions situated between the tropical line and the fiftieth degree of north latitude, are a hardy, vigorous, healthy, and intellectual people. The constant use of water and friction is by no means the least important of the causes of the healthy condition of this active race, upon whose bodies the accumulation of epidermal matter is thereby prevented. The natives of Patagonia, on the other hand, are affected with a hydrophobia quite worthy of Englishmen; and this, combined with their natural filth and the obstructed state of the skin, render this gigantic people ill-made, dropsical, and bearing the germs of a variety of loathsome cutaneous disorders, especially elephantiasis, in which, where the disease exists, lymphatic circulation is completely destroyed.

In our colonies, likewise, the negro who shuns water and friction, and whose only luxury of cleanliness is to bask in the sun and be *loused* by his comrade, after the fashion of the most obscene of the monkey tribes, is always afflicted with some dis temper or other: the plantation infirmary is usually full of such patients, who might be relieved from most of their complaints by a more cleanly discipline of the body. In contradistinction to

this, the muscular, healthy, water-loving negro may be seen, finely-grown, full of activity and vigour, and, when properly fed, free from bodily ailment.

This argument might be carried further, even to the brute creation, from which I shall take a single illustration. The hog is known to be the dirtiest of animals, and to be fond of living and wallowing in mire: hence it is inferred that filth is natural to the creature, and, as belonging to the habits given to it by nature, is much more conducive than cleanliness to its health. But such is not the case: it has been proved by long experience that the filthy hog is unhealthy, and its flesh often unsound; that swine fattened in filth, especially wet or damp filth, are subject to many loathsome diseases, and, among others, to the presence of the fluke-worm in its flesh, in which case it is said to have the measles. Hogs kept clean by water and scrubbing, and placed in a clean dry sty, with dry litter, are not only less liable to disease, but fatten more kindly, and their flesh is much better flavoured. Being last year on a visit to an agricultural friend in Gloucestershire, I had an opportunity of seeing and watching the process of fattening six hogs upon this system of cleanliness. The poor brutes were kept in a sort of stable with a window. They had fresh litter and their stye was cleaned every day. Their bodies were kept quite clean with water and the scrubbing-brush, a little soap being used occasionally. These hogs were always fed in the open air, and when

they left their sty to take their meal, would approach any person present to be scratched and patted. In this I never felt any repugnance to indulge the creatures, for their skin and the hair or bristles that covered it were beautifully white and clean, and they were themselves free from the disgusting effluvia which generally proceeds from swine. These were fattened in much less than the usual time, and grew to an enormous size, thereby yielding a profit in flesh more than commensurate with the additional trouble they had occasioned. I ate of their flesh after it was converted into bacon and hams: it was the most delicious and highly-flavoured I had ever tasted. The flavour and superior quality of this meat were due solely to the system of cleanliness and friction pursued; because hogs of the same age, and in all respects similar, which were fed at the same time, upon the same food, but kept in the usually dirty manner, did not fatten so soon, and their flesh was of an inferior quality. This experiment the reader will doubtless consider conclusive, even with regard to an animal of the most naturally dirty habits.

The constant cry among the unphilosophical portion of the medical profession, as among certain empirics, is, that "nature never intended this or that;" — "nature never intended that man should keep his health by the practice of bathing and friction, or that man should wash and scrub the hog." Some medicating parents put these *sayings* constantly forward. They are easily

refuted. The fact is, that we are not in a state of nature: it is a condition in which man could not live; were such his lot he would be the weakest and most helpless of animals. He has fortunately a higher destiny, being endowed by his Creator with intelligence worthy of the bright futurity which his Saviour has opened for him. His intelligence progressively leads him towards perfection and knowledge. God has implanted an instinct in all his living creatures; but the instinct of man, which is called reason, is different from that of the inferior animals in this single point: they possess animal instinct only, which impels them to provide for their physical wants and safety; he possesses moral as well as animal instinct. And it is this moral instinct which gives him a natural admiration of what is good, teaches him the difference between right and wrong, and leads him to inventions and appliances not only for his own individual comfort and the enjoyment of his health, but also for the improvement of those living creatures dependent on him and granted for his use. Thus, any invention in food, in raiment, or for any luxury or enjoyment—any measure for the proper government of his community—any discovery in knowledge—in short, any physical or moral action whatever, appertaining to the wants or the wishes of his life, is as much a part of man's instinct as the building of huts by the beaver, the collecting of honey by the bee, or the storing of provisions by the industrious emmet, belongs respectively to the instinct of these

several creatures. God has planted in us the instinct of reason, and given us the will to use it in progress towards moral perfection. *Aide-toi, le Ciel t'aidera**, is a maxim founded upon the soundest moral philosophy, and certainly implies a refutation of these hacknied allegations of what nature did or did not intend. In following it, man is kept in the right line by the instinct of right and wrong that belongs to his nature, and which has led him to establish moral and political laws against those weaknesses and passions that prove at times too strong for his consciousness of rectitude.

In resuming the argument, after this short though necessary digression, I must observe that if we take man in the coldest as well as the hottest regions of the earth, the practice of warm bathing and cutaneous friction are better preservatives of health than the whole *materia medica*. In the cold regions of the North, where warm bathing is used and enjoyed by all classes, it is the custom, after the application of the hot water and friction, to be rubbed all over with snow. This never appears to do any injury, although, according to a mistaken notion in England, it would produce fatal inflammatory disease. A friend of mine who visited Russia with a broken constitution, but whose health was completely renovated by the use of Khoumese, or the lacteal wine of the Tartars, gave me an account, which I here transcribe, of his first acquaintance with the warm bath when at St. Petersburg.

* *Help thyself, and Heaven will help thee.*

"After undergoing," says he, "all the manipulation and friction which accompanies the warm bath, in which I had remained nearly an hour, and the whole surface of my skin being wholly freed from the epidermal accumulation against which you used to caution me, I was led into the adjoining sweating room, where the temperature was 100° Fahrenheit. Here I was seated on a mat. The assistant pointed out to me a ring, which he told me I might pull when ready, and the water would come, but that I must first sweat a little. When I saw him engaged in preparing the linen to dry me, which had been placed in a large basket over a chafing-dish of charcoal, I pulled the ring, expecting to receive a shower of hot water. The flood streamed upon me, and I cannot describe to you my sensation of horror when I felt upon my head and body a torrent at only 35° Fahrenheit, each drop appearing to weigh a hundred-weight, and the whole to crush me to the earth. Between the surprise and pain I was unable to move; I thought I should have died on the spot. In a few seconds, however, all was over; the flood ceased, the blood by reaction rushed to the skin, and I was in a glow. The assistant rubbed me dry, I dressed myself, and felt stronger and more vigorous than I had been for years before. Since this first experiment, I have often repeated it, though not without a shudder each time I pulled the ring. I have never experienced any but a beneficial effect from this bath, though I must admit that to receive ice-cold water upon the skin

whilst the pores are open and yielding a copious perspiration, would in any other country seem an act of madness. Yet it is practised in Russia by all classes ; and in the winter, snow is substituted for cold water."

Though I do not venture to recommend the practice, I know a gentleman residing within a few miles of London, who, after a soaking, a soaping and a washing, in a warm bath at 100°, in which he generally remains three quarters of an hour, suddenly leaves the warm water to receive over his head and body the contents of a cold shower bath. He is then rubbed dry with coarse towels, and his skin afterwards submitted, during five minutes, to the action of the flesh-brush. He was once a dyspeptic ; he is now one of the healthiest of men. His practice is, however, a solitary instance in this country,—it might be termed an experiment ; and its superior benefits compared with those arising from the warm bath without encountering such extremes of temperature, remain yet to be proved. It is certain, however, that the Russian practice is unattended with danger, or the least probability of even catching cold. This disturbance can arise only when the skin is in a weakened state, after bodily exercise or muscular exertion, and during a chill whilst in perspiration from such efforts. The generality of persons, reasoning analogically, imagine that all kinds of perspiration lead to this result ; and many *unphilosophical* medical men share this opinion. *The effect of the warm bath produces an entirely*

opposite result: by exciting the vascular action of the skin and giving it tone, it imparts to it a degree of strength and vigour which enables it to resist cold better than before it was so acted upon, and a power of reaction which would produce a glow on a sudden change of temperature even to the freezing point. Thus, the extremes between hot bathing and snow, taken in succession by the Russian peasant, are not quite so unphilosophical as many persons believe.

The principle I have just stated may be exemplified by this further fact, which may be proved by the experience of every one. On leaving a comfortable and warm room, properly ventilated, and encountering the keen frosty air, we are not half so liable to catch cold as after we have been sitting in a badly-warmed apartment, where we feel a cold and shivering sensation. Indeed, in the former case, cold is never caught by a person in health; in the latter it is, almost invariably. In the warm apartment the skin preserves its tone, its vascular action is properly kept up, and a power of reaction retained which resists the cold of the atmosphere; in the half-warmed room the animal heat is diminished, the fibre becomes relaxed, the skin loses its tone, its power of reaction is diminished or lost, and a cold is the consequence of sudden exposure to the low temperature of the air. The same principle may be applied to the effect of draughts of air. I may add, that I am never myself troubled with colds, nor do I ever shun a draught: I attribute this freedom from so trou-

blesome a complaint to my constant use of the bath and the flesh-brush.

After the above observations in favour of bathing and friction of the skin, I am bound to show why they are necessary. This I can do only by indicating the connexion that exists between the skin and the viscera which it covers. In the execution of this task, it shall be my aim to write in such a manner that every class of readers may understand me,—avoiding technicalities as much as possible, and rejecting entirely that unnecessary pedantry which makes the generality of medical men so fond of rendering themselves unintelligible to the multitude *.

One of the most important organs of the human economy is the skin; it performs many of the higher functions of physical life, and is more or less connected with them all. The state of the stomach and its power of digesting food depend

* Such pedantry is especially out of place in judicial evidence. I remember a late instance which struck me forcibly at the time. A man had died from taking Morison's pills to excess. At the coroner's inquest one of the witnesses was a medical man, who had attended the deceased just before his death. He was a general practitioner, or, in common parlance, a surgeon-apothecary, whose practice lay among the lower classes. He stated, that when called in, he found the deceased "labouring under *hyper-catharsis*, induced, as he considered, by the *exhibition* of powerful drastics." Of course the jury wanted to know what *hyper-catharsis* signified, and it required a rather tortuous cross-examination to make the *doctor* inform them that this formidable compound word meant nothing more than *excessive purging*, and not a newly-discovered disease

greatly if not principally upon the state of this covering, which, besides its connexion by means of various organs and vessels as well as by the general laws of sympathy that regulate every part of the human frame, is itself continuous with the membrane that lines the intestines throughout, or to speak more correctly, that lines the whole of the alimentary canal. So nicely is it acted upon by the condition of the stomach and the nature of the aliment contained therein, that different kinds of food taken into this viscus and not digested, impart a different character and hue to the skin, whilst almost every different disease stamps upon it a peculiar and a specific character, in which a skilful physician can detect the ailment. If the circulation through the skin is impeded and its free perspiration stopped, disease immediately ensues, and all the functions of digestion are disturbed. By means of the insensible perspiration, which is always going on, the blood-vessels are freed from the greater part of their dross and superfluous matter, the principal portion of which is produced by excess of nutriment. Should this exhalant power be checked by an unhealthy state of the surface, by which the perspiratory pores are always affected, the circulation of the blood becomes oppressed, the whole frame is subdued by languor, head-ache is frequent, and fever is brought on. Relaxation of the skin likewise renders it extremely sensible to changes of temperature, and often induces colds and inflammation, besides striking the general secretions unhealthy and

throwing the whole system into a state of disturbance.

The condition of the skin is the truest indication of health. By neglecting to keep it in a sound and healthy condition, which in almost every case depends upon bodily cleanliness, many loathsome diseases are engendered besides those to which I have just alluded. The skin is the most sensitive and excitable part of the human frame; for it is the indicator of sensation from without to every other part of the body. It is traversed in all directions by a countless variety of blood-vessels, and of other minute vessels termed lymphatics. It is also so overrun with nerves which constitute the medium of sensation, that the skin is generally supposed to contain a quantity of nervous matter greater than that existing in the brain and the spinal marrow united. Hence it is that this cutaneous covering of the human frame is endowed with a more acute degree of sensibility, consequently of proneness to irritation than any other organ. Hence it is also that the skin cannot bear direct contact without inflaming and becoming painful. To obviate the effect of this irritability and preserve it from the injury of direct contact, the skin is covered by the scarf-skin or cuticle termed the Epidermis. This external coating is wholly deprived of nerves and blood-vessels, and is therefore devoid of sensation. Through it sensation is conveyed, by contact, to the nerves with which, like

skin is studded, some lying longitudinally beneath, others standing out horizontally at the surface like innumerable paps or heads, each nerve being attached to an artery, which has also its attendant vein. The substance of the epidermis consists of layers of minute scales, which are in constant progress of renewal and destruction. The layers that have already done their office and given place to those formed under them, are constructed to be detached from the skin, the pores of which, acting through the cuticle, are required to be kept free. On the face and hands, constantly exposed to the air and to friction, besides the frequent washing they generally undergo, these scales have no opportunity of accumulating; but under the clothing of the body they form a crust which, like the moss upon the stems of trees, serves to engender disease and blight, and of which I shall presently have occasion to speak.

Immediately beneath the epidermis lies a most wonderful tissue of vessels termed the *RETE MUCOSUM*. It covers the whole surface of the skin, and forms a curiously complicated net-work of ducts or channels so minute that no magnifying power yet applied has enabled the eye to trace their source. The vessels of this mucous body or net-work are principally filled with a sluggish, stagnant fluid, which communicates to the skin its peculiar hue: the black of the negro, the different shades of the natives of India, the coppery tint of the red American Indian, the various gradations of colour, in short, which exist in the different

races of men. Beneath the *rete mucosum* a series of very minute vessels convey from the blood to the openings in the skin called the pores, the perspirable matter that exudes from the surface of the body, such matter being, as I have before observed, the dross of the system, arising principally from superabundant nourishment. It is, in fact, a portion of the residue of the digested aliment which has passed down from the stomach and been absorbed and carried as chyle into the mass of the blood. Perspiration, both sensible and insensible, is one of the means given by nature for the disposal of an undue quantity of nourishment digested and elaborated by the stomach and pancreatic juices, and which the exudation excited by exercise and muscular exertion, prevents, by thus carrying it off, from forming an excessive deposit of fat, and thereby producing corpulency.

The almost imperceptible vessels which supply the exhalants cannot, by any physical means yet known, be freely traced to their insertion in the blood-vessels; nevertheless we have constant evidence of their direct connexion with these latter, because they become filled with blood whenever they are more than usually stimulated either by friction of the skin, or by bodily exertion, or by great heat, or by the reaction arising from a cold bracing atmosphere, or by certain actions of the mind, such as modesty, shame, or anger, which produce blushing, or a flush in the countenance. The physiology of the very minute lymphatic vessels, and the theory of the circulation through them,

are yet imperfect for want of instruments of sufficient microscopic power; but enough is known to prove that upon the health and due action of these vessels depends that of the skin. Now, the functions of the stomach being regulated by the actual condition of the skin, it follows, as a natural consequence, that unless this be in a healthy state, the proper action of the stomach must be altered, and the whole body thereby thrown into a state of disturbance.

CHAPTER II.

THE SAME SUBJECT CONTINUED.

IN the preceding chapter I stated that a crust of epidermal scales is formed by accumulation upon the surface of the body when not bathed and rubbed. I shall now show how such accumulation becomes the generator of disease, and why the body cannot be preserved in perfect health unless bathing and subsequent friction are resorted to, common washing or sponging of the body being not quite sufficient without an occasional use of the warm or tepid bath to remove the epidermal crust.

- It has already been shown that free perspiration, sensible and insensible, is so necessary to the human physical condition, that without it, fever headache, and inflammation, ensue. Also, that the skin itself, by a disordered state of the exhalant vessels or their extremities, forming the pores or outlets, becomes unhealthy, and by being so, *disturbs the action of the stomach and alimentary canal, whereby the functions of digestion are im-*

peded, the frame debilitated, and the whole animal economy thrown into confusion. Now, if for want of bathing and friction, a crust of epidermal scales is allowed to form upon the skin, instead of being constantly removed, some of the perspiratory pores are closed, whilst a portion of the aqueous fluid perspired remains coagulated at their orifices under the crust, and often raises pimples. As the evil goes on day by day, an extremely offensive fermentation soon takes place. This is increased in hot weather by the coating of the scales becoming impregnated with unhealthy perspiration, exuding through the pores beneath that are free. Now, human exhalations are poisonous, when either breathed or absorbed; but the animal or cutaneous exhalations of dirty individuals are generative of the most pestilential disease. Hence, when a number of persons ill-clad, ill-fed, and dirty, are congregated in a small space without much ventilation, the germs of typhus fever and plague, which is probably only the worst type of the former disease, are developed, and annually thin the over-population of some of the most densely inhabited districts in large cities. Neither is this kind of disease confined to the poor: the infection is carried into the houses of the wealthy, nay, is sometimes engendered there by bodily uncleanliness; for it is not sufficient to keep the house clean and sweet, the body must be kept so likewise. Nor is this, by many, the only evil. Whenever the body is lowered by scanty or unwholesome diet, by breathing impure air, by the action of

cold, by self-medication, a thing of very common occurrence—by absence of sufficient bodily exercise, by want of the necessary cleanliness imparted only by proper bathing and friction, or by any other cause ;—the moment the body falls below its normal standard, there is an immediate predisposition to catch cold. The patient becomes feverish, and the least draught of air produces cold in the head. This complaint is an inflammation of the mucous membrane which lines the nostrils, and extends down the windpipe all through the respiratory organs ; a fact that accounts for cold in the head so frequently terminating with cold in the chest, and not unfrequently with dangerous inflammation of the lungs. Many individuals who wear their hats in the house for fear of catching cold, or tremble at encountering the least draught of air, would find the occasional warm bath and friction, and daily sponging with cold water, followed also by friction, a much surer preventive.

Next appears the effect upon the stomach arising from the skin not being kept free from epidermal scales. Its functions are impeded, and the result is dyspepsia and costiveness. In very many cases the latter is attended with so great an irritability of the mucous membrane of the stomach that the use of the most mildly seasoned food produces inflammation, whilst unseasoned food will remain undigested. These are far from being all the evils, which want of care of the skin entails upon the stomach ; but I should far exceed the space allotted to me, were I to state the whole, and as

I think I have said enough to convince all reasonable persons of the necessity of attention to the skin, I shall enumerate no others, further than by observing that the cutaneous disorders, about which I am going to say a few words, all more or less impair the action of the stomach.

The origin of the worst cutaneous diseases, which do not proceed from an hereditary or natural organic defect, may be traced, as may likewise a variety of fevers, to the causes I have already described. These causes thus operate. The blood impregnated with oxygen, which renders it of a rich red colour, is propelled by the heart into the arteries, and by them conveyed to every part of the body, there to secrete the matters necessary to carry on animal life. The blood in affording these secretions, parts with its oxygen, and receives carbon in return ; and being impregnated, perhaps to saturation, with this substance which communicates to it a dark colour, passes through the minute ends of the arteries, into the minute entrances of the veins ; these minute portions of the blood-vessels being termed *capillary*, from their resemblance to hairs. The blood thus deprived of its vital principle returns to the heart, whence it is driven into the lungs to be again rendered, by the process of breathing, fit for the purposes of life. This done, it returns to the heart, which again propels the oxygenated fluid into the arteries as before. But there is a second process which physiologists generally overlook, *but which is of the highest importance.* I men-

tion it because I shall have occasion to advert to the heat of the human body, and perhaps occasionally to its source. When, in the lungs, the blood receives oxygen by the inspiration of atmospheric air, it gives out carbon, which is ejected by expiration in the form of *carbonic acid gas*. This gas is therefore formed either in the lungs or in the blood the moment the carbon absorbs the oxygen. Now, in the formation of carbonic acid gas by a mixture of oxygen and carbon, heat is always evolved; and as this process takes place when the blood in the lungs is oxygenated, heat is thereby evolved, and the blood receives a portion of caloric at each inspiration. Hence, the warmth of the blood, and hence consequently animal warmth, which, as experience has long ago taught, is communicated by the blood to the different organs *. Whenever any violent exertion of the body is used, the animal warmth is aug-

* This explanation of the source of animal heat has been contested, but not, I think, upon tenable grounds. The most eminent chemists and physiologists of the present day agree with Lavoisier, that the heat evolved by the union of carbon from the venous blood, with oxygen received into the lungs by respiration, is communicated to the arterial blood. Some, however, object to this being the principal source of animal heat, because, they say, the quantity of carbon yielded by the blood is insufficient for the supply, or the greater portion of the supply, required by the body to keep it at its usual temperature. This I apprehend to be a wrong conclusion. The body of an ordinary man throws off in twenty-four hours about 40,000 cubic inches of carbonic acid gas, which contains 11.59 *avoirdupois ounces* of pure carbon; a quantity proved by recent experiment to be quite sufficient for keeping at its full temper-

mented ; because, not only is the circulation of the blood more rapid, but the breathing is very much

ature the blood, and consequently the body, taking into account all the losses of heat sustained by the latter.

According to Lavoisier, Crawford, Laplace, and other eminent philosophers, the oxygen received in respiration gives out, in its combustion with the carbon of the blood, the same quantity of heat that it would do if the carbon were converted into carbonic acid gas by combustion in the oxygen ; only the process is more gradual and adapted by slow development to the wants of the animal body.

There are, I admit, other sources of animal heat, which contribute to the supply received by the body. Heat is no doubt evolved by the hydrogen contained in venous blood combining with a portion of the oxygen received into the lungs. Heat is likewise evolved in different parts of the body, when the fluid secretions from the blood assume the solid state. Lastly, there is a considerable electrical action always going on in the living animal body, many of whose functions are believed to be wholly dependent upon it ; this action very probably adds in some way or other to the amount of the animal heat when deficient.

Many eminent philosophers have objected to the hypothesis of the formation of carbonic acid gas taking place while the blood is in the lungs ; because, as they allege, the lungs would at length become the hottest part of the body, and would be injured by the heat. Lagrange, Crawford, and others, have attempted to get over this difficulty by some very ingenious, but, I sincerely believe, very useless theories. None of these philosophers seem to have taken into account the peculiar chemistry of the living body. It is true that very little is known about this chemistry ; nevertheless, there is abundance of facts to lead to conclusions that would remove the objection.

I have explained in the text further on, the action of the fluid animal perspiration in counteracting the effect of excessive heat, and protecting the body from it. I may here add

increased, consequently the disengagement of carbon and its formation into carbonic acid gas

that, by the power of this agent, the human body is capable of supporting, for a time, without injury, a heat above 260° , being more than 48° above the temperature at which water boils. Now if nature has contrived such a mode of protecting the body generally from excess of heat, is it not reasonable to infer that she has been equally careful in preventing the lungs from becoming the fire-place of the body, or a permanent focus of heat, by which their very existence would be endangered? That she has done so I shall endeavour to show.

A fact is evident to the senses of every one: in breathing, not only are carbon and nitrogen given out from the lungs at every expiration, but a considerable quantity of water accompanies them in the form of vapour, as is evident when glass or bright metal is breathed on, and is visible when the air is cold or damp. Whence comes this water? Venous blood contains hydrogen as well as carbon, and water is no doubt formed by this hydrogen, or a portion of it combining with some of the oxygen received into the lungs. But oxygen and hydrogen will mix without producing water: the aid of electricity is required for such a consummation; and this is abundantly supplied in the living body. Now the water is certainly not formed in the condition of vapour, but is converted into this condition *afterwards*. The conversion of this fluid into a gas absorbs heat, consequently the evaporation of the water formed, helps to carry off any excess of temperature that might otherwise injure the lungs.

I may here add that the formation of water may also take place by an action somewhat different from that which I have described. It is well known that many of the animal secretions contain ammonia, a substance composed of hydrogen and nitrogen. Now the atmospheric air consists of eight volumes of this latter gas in combination with two volumes of oxygen. This being separated from the nitrogen, oxygenates the blood, whilst a portion of it combines with the carbon. *The excess of nitrogen*, separated from the air, being breathed

are more frequent. And this increase of bodily temperature is much greater in such as are

out again at each expiration, the portion absorbed for use is carried by the blood into different parts of the body; and afterwards combines with hydrogen to form ammonia. If, therefore, ammonia and oxygen be acted upon by electricity, the nitrogen is disengaged and water formed. If this process occur, part of the nitrogen expired from the lungs may be derived from it. The water in the breath is perhaps formed in part by both of the above chemical processes. This water from the lungs, like the fluid perspired from the skin, is charged with animal matter. It is in all respects similar to the aqueous perspiration from the body, with which, no doubt, it has the same common chemical origin.

There is another fact. The respiratory organs, from the commencement of the nostrils down to the minutest bronchial passages, are lined with a mucous membrane, which, among other uses, helps also to defend the lungs against extremes of temperature. Whenever there is an excess of heat, or its absence in a degree to produce excess of cold, this membrane yields a considerable quantity of mucous fluid; a circumstance observed by every person afflicted with a common cold in the head, or, as the medical men term it, "inflammation of the schneiderian membrane." This mucous lining, then, contributes its share to preserve the lungs from injury by heat; and, no doubt, when a very hot air is breathed, its fluid partly vapourizes, and aids the other aqueous formations to absorb the excess of caloric.

Let it be observed that in ordinary breathing, the expirations of the lungs are always warm, whilst the inspirations are cold.

Among the opponents to the theory I have given in the text concerning the origin of animal heat, is Sir B. Brodie, who denies that any heat is produced in the body by the formation of carbonic acid gas. Having killed two rabbits of the same age, size, and, I believe, colour, by dividing the spinal marrow, he severed the head of one, placed ligatures upon the blood-vessels

pursy and short-winded ; whilst those who have "good wind," and whose breathing is but little increased, have not the heat of their bodies increased in a greater proportion,—the one depending upon the other. But the generation of animal heat is not confined to the lungs only : it takes place, though in a comparatively trifling degree,

sels of the neck, and, by means of small bellows fastened to the windpipe, produced artificial respiration. This rabbit, he states, cooled sooner than the other. The circumstance is very probable, though others have repeated the experiment with a different result : for blowing from bellows into the lungs of a *dead* animal, a quantity of cold *compressed* air would soon overcome any small portion of heat which artificial respiration might have induced. Sir B. Brodie repeated his experiments upon rabbits killed by poisons, which disturbed the functions of the brain ; they were attended with the same result ; though, as in the preceding, others have repeated the experiments with a contrary result. From these experiments Sir B. Brodie jumps to the conclusion that animal heat is dependent upon some function of the brain. He argues that if the formation of carbonic acid gas were the source of animal heat, his dead rabbits would have maintained their temperature under the action of his bellows. But did these bellows produce the whole complicated chemical action that takes place in the lungs of the living animal ? Did the exhalations of the dead rabbit afford warmth and water as in the living animal, as well as carbonic acid gas ?

These experiments, far from refuting the theory, have only served to show that the chemical action of animal life cannot be produced by artificial means upon a dead body ; and further, that the action of cold compressed air, forcibly propelled from bellows into the lungs of a body deprived of the living principle, cannot possibly produce the same effect that *simple atmospheric air* would do when breathed by the living animal.

all over the surface of the body. It has been remarked that the blood, after entering the veins through the capillary vessels, does not always preserve the same dark colour until it reaches the heart. The veins near the surface of the skin contain a much redder blood than those seated further beneath it; and the reason of this is that oxygen is absorbed and taken to the blood-vessels by the pores of the skin, through which carbonic acid gas also escapes, after having evolved in its formation a certain quantity of heat in the blood.

To complete this explanation, I must show why there is a higher bodily temperature in summer than in winter, which will illustrate what I shall have to state hereafter, concerning loss of animal heat by immersion in cold water. When the atmosphere is colder than the body, the latter, by the law of tendency to equilibrium which regulates heat, yields a portion of its temperature to the colder air, and as this becomes colder and colder until the cold is excessive, the body, if exposed to it, will continue to lose gradually a greater portion of its heat. The blood will retire to the centre of the body, and the circulation become impeded and sluggish. Breathing will gradually be attended with more difficulty; consequently every instant the generation of heat will be less, whilst the quantity subtracted by the atmosphere will be greater. Sleepiness will soon be induced, and at length the flame of life will be quietly extinguished like the expiring wick of an exhausted candle.

In summer, when the temperature is equal to that of the body, the latter continually generates heat, but loses none. When also the air is hotter than the body, the latter would, by the laws of heat, have a tendency to absorb some from the air. In either case the animal system would be heated to an excessive and dangerous degree but for a beautiful contrivance of nature to prevent such an effect. When the body is exposed to a temperature that gives discomfort to the skin, which is then dry and parched, the vascular action of this latter is increased to considerable intensity, and the exhalants throw out, instead of insensible perspiration, which is so called because it is an invisible vapour, an abundant quantity of sensible perspiration in the form of a transparent fluid. This fluid, which is water impregnated with animal matter, being evaporated by the heat of the dry atmosphere, absorbs caloric, and produces cold all over the surface of the skin, which immediately becomes cool, and the superabundant heat is thus drawn from the body.

When freed from the protecting cuticle, the absorbing power of the skin is immense, as is amply proved by the every-day operations of vaccination and inoculation, the poison or virus being introduced under the cuticle, and most rapidly taken into the system. This absorbent power leads to the following consequences, which show the mischief that may result from the accumulation of epidermal scales upon the surface of the body. *When the skin is covered with a thick*

and long-accumulating layer of dead scales saturated with perspiration, and in a state of nauseous and unhealthy fermentation, the pores that are open, and would absorb atmospheric air if they could, absorb that which lies within their reach, and suck up the poisonous matters that arise from epidermal and perspiratory decomposition. These substances are thus conveyed into the lymphatic ducts, and into the blood-vessels, both of which are obstructed and injured. The blood tries in vain to repel this seed of disease : the exhalants are powerless to carry it back. Hence cutaneous eruptions, leprosies, pimples, and abscesses, caused by Nature's endeavour to get rid of the absorbed matter, which in course of time increases in quantity, and corrupts the entire system. This is the reason why thermal and mineral waters, such as those of Bath, Montpelier, Barège, and others, prove so efficacious in disorders of the skin. Their action is principally mechanical and stimulating ; they dissolve and remove the epidermal scales, free the pores from their morbiferous incrustation, and by their power of excitement give a healthy tone to the skin.

The variety of blotches, and lumps, and indurations, and sluggish tumours, which can be traced to no specific cause, arise generally from the state of the skin I have described. They might be speedily removed by bathing and friction ; but the great number of medical men of the calomel and port-wine school, who combat these diseases, allege that the latter proceed from the state of the blood

arising from imperfect or diseased visceral secretions, and from glandular obstructions; and they forthwith commence a furious course of mercury combined with drastics, by which the seed is sown of a train of evils that ultimately shorten life, after embittering its last years with a slow, lingering, and excruciating torture. The philosophy of these medical men, *si parva licet componere magnis*, resembles that of the celebrated astronomer, Laplace, in his Nebular Hypothesis. He conjectures that the sun originally revolved upon its axis, surrounded by an extremely heated and expanded atmosphere, extending beyond the orbit of the furthest of the planets afterwards formed; and that this lighted and rarefied atmosphere afterwards condensed in different belts or zones into the present planets of our system. This the great French philosopher deems the FIRST CAUSE, without ever considering that the sun and nebular atmosphere, supposing his hypothesis correct, could not have existed of necessity, and were therefore themselves only an effect, a FIRST CAUSE having created and so constituted them that the one should remain in the centre, and the other afterwards form planets. In like manner, the doctors who ascribe to the bad state of the blood arising from imperfect secretions and glandular obstructions, the diseases of the skin which they are called upon to cure, are unable to expand their imagination to the cause of which these obstructions are only the effect, by tracing them to a diseased state of the pores of the skin, arising from

the accumulation of years of filth. No: the disordered state of the skin is mistaken for an effect, the doctors themselves having perhaps the hydrophobia of their countrymen. But, says Saint Réal, "Qui dit docteur, ne dit pas toujours homme docte, mais qui devrait être docte *."

The last series of complaints I have to mention as assuredly depending in no small degree upon the state of the skin, are gout, gravel, and every other disturbance arising from an undue secretion of lithic acid in the kidneys. It has frequently been asked why young persons are not usually afflicted with these latter complaints, as well as the middle aged and the old. The question has remained unanswered: I shall therefore endeavour to suggest a reply.

An excessive secretion of lithic acid generally arises from overloading the stomach with animal food, or taking more than the health requires, the stomach being at the same time far below its normal state, and probably—for it is so in nine hundred and ninety-nine instances in a thousand—for want of keeping the skin in a healthy condition. In numerous cases of chronic gout, and of lumbago, I have recommended, and with very great success, total immersion of the body during a hour in water at 100° Fahrenheit, containing a couple of pounds of dissolved salt; well rubbing the patient with bran prior to leaving the bath, the temperature of which is kept up, and then

who says doctor, does not always say a learned man,
or ought to be so.

wiping and strongly rubbing the skin of the whole body with rough towels : the entire operation of bathing, and rubbing, and wiping, being conducted in a room with a fire, if in winter, and the diseased part alone, if sore, being exempted from the friction. This is repeated every second day until the pain is subdued ; the bowels being kept open by the enema, or by very minute and largely diluted doses of Epsom salts. The use of warm clothing, especially round the loins, is recommended in addition to the bathing. When the pain is subdued the invalid takes the warm bath only once a week, without bran, and either with or without soap. If in the spring or summer, the patient begins to sponge his body every morning with *cold* water the moment he leaves his bed, rubbing his skin dry with a coarse towel, and using the flesh-brush afterwards during from five to ten minutes. None need be apprehensive of catching cold even should the surface of the body, on leaving the bed, be moist with perspiration ; because the friction increases the circulation in the skin and gives it tone, whilst cold attacks those only whose fibre is weakened and relaxed for want of such a stimulant, and by the disturbance of the system arising from the accumulation of epidermal scales. The success of this practice of attacking the disease by hot bathing and getting the skin into a healthy condition, has been so successful, that in some of the most acute attacks of gout the use of colchicum has been almost entirely obviated.

If no more food be taken than is requisite for the wants of the body, if the diet be of a mixed nature, if proper bodily exercise be taken, if warm clothing be used, and—what is of vital consequence—if the skin be kept in a healthy condition by bathing and friction, no one has need to fear those lumbar disturbances generating the variety of distressing complaints which generally refrain from attacking youth, and commence their assaults at the middle age of life. Why this preference should be given to those who have passed the period of youth, I shall now pause an instant to inquire.

In the youth of adult age, the body is not yet completely formed : it does not reach maturity until forty years of age, at which period, parts that were once cartilage have been progressively formed into bone. From the age of puberty to that of the maturity of manhood, the progress of formation goes on and then ceases, the body being now in its most complete state. The process which afterwards continues is one of renewal only ; whilst, in many instances, from want of muscular action arising perhaps from more sedentary or more indolent habits, joined to an excess of food, the flesh is unduly increased, a deposit of fat is made and corpulency ensues. The youth whose body is still in progress of completion, requires more food to supply matter for the secretions of formation ; the quantity which his appetite induces him to take, provided the stomach digest it, is therefore applied to this purpose and does not clog the

wheels of the human machinery. Further:—from the cartilaginous state of what afterwards becomes bone, the youth has greater elasticity of frame, which causes a corresponding elasticity of mind; and his bodily exercise is greater, because his spirits are more buoyant. Therefore, independently of the use to which the excess of food is applied, the other causes mentioned prevent an undue deposit of sebaceous or fatty matter, and he remains slim as well as supple,—whilst many causes often tend to check to so great an extent as afterwards occurs the accumulation of epidermal scales upon his skin. If he be of active habits, the exercise he takes partially removes these, because in young people they are not so tenacious as at a more advanced period of life. At the age of forty he requires no nourishment to afford secretions of FORMATION, for all is formed: all he wants is to supply secretions of CONTINUANCE. Hence a less quantity of nutriment will serve him. But instead of gradually diminishing, he continues perhaps to take the same quantity of food—nay, he very often increases it and devotes himself to the pleasures of the table. Now, as nature has no use for any more nourishment than she requires to keep him in health and vigour, she is embarrassed with the overplus, and the consequence is the disturbances I have mentioned. This, co-operating with the usual state of the skin—for the man of forty is often less cleanly than the youth of twenty, even supposing him to be a clean person—leads to that painful disease called gout, in

which some of the salts of lithic acid, in extreme cases, obtrude from the joints and are taken from them in the form of "chalk stones."

Gout then is an effort of nature to get rid of an overdue quantity of nourishment. It frequently follows continued excess in the use of spirits and fermented liquors, as well as food ; and is usually more active in patients in whom there is a large deposit of fat, though it very often violently attacks those of thin and spare habit , in whose peculiar temperaments there is no deposit of fat even to extreme old age.

There is another species of gout commonly termed "rheumatic gout," or the "poor man's gout," which arises from poorness of living, from the use of coarse and badly-cooked food, from excessive consumption of beer and spirits, and from exposure to cold after violent muscular exertion, or manual labour. This kind of gout proceeds likewise from lithic acid, all this description of complaints, including gravel and stone, having one common origin—a discovery due to that great chemist, Dr. Wollaston. Rheumatic gout, like the other description of disease, generally spares youth, and attacks those bodies which are wholly *formed*, and perhaps half worn out, ere their maturity, by over-labour, by excess in drink, or by the consequences of debauchery. The causes of this are to be traced to the same source as those of the preference given by the other gout to middle-aged and elderly persons : namely, the existence in the young of the process of formation, which

makes the digesting power of the stomach more active and less liable to derangement, besides producing the other effects already described.

Let this then be understood: that the common gout proceeds from eating and drinking too much, aggravated by the uncleanly and unhealthy state of the skin; and that the exciting causes of rheumatic gout are a combination of poverty of diet, excess in drinking fermented liquors or spirits, and exposure to cold, acting upon a predisposition, either increased or originally brought on by an improper state of the skin from want of cleanliness, bathing, and friction. The usual causes of the poor man's gout may be summed up in the words of Malthus, "vice and misery;" those of the rich man's gout in the words of a celebrated preacher, "an abuse of the blessings and comforts of life."

I have now to indicate how, upon the principles I have laid down, the bath and friction are to co-operate in keeping off entirely, as well as in defeating, the premonitory symptoms of either complaint when they do appear.

Warm bathing and friction, as I have stated before, I have found very efficacious in the acuté and chronic stages of both diseases. The constant use of the bath and rubbing, so that the skin may be brought into a perfectly healthy state, combined with an attention to diet upon the principles I have set forth relative to the cause of gout attacking the mature instead of the youthful man, will keep off the symptoms of the dis-

ease by maintaining the stomach and intestines in a sound condition, and counteracting an excessive secretion of lithic acid.

When gout appears for the first time, its advent is announced for some time previous, perhaps a year or two, by premonitory indications which never fail. A very slight deposit of fine red sand from the urine of most persons is sometimes seen in the chamber vessel. This is lithic acid, which, when the deposit is only occasional and in small quantity, needs to occasion no uneasiness ; but when very frequent, and in large portions, forming at times a very tenacious coating round the inner surface of the vessel, it should excite attention. At the same time, the liquid voided will frequently, after any excitement from fermented liquors or spirit, or from digestive disturbance, present a turbid appearance as if impregnated with thick viscous matter. This is also occasioned by lithic acid in a different form. Or perhaps a severe and unexpected attack of gravel may come on, attended with the most acute pain by a small calculus passing down one of the ureters or urinary ducts from the kidneys to the bladder; the stone that is passing being larger than the duct, and therefore causing great distention and irritation in its passage. When it has reached the bladder it is perhaps voided whole or in fragments, or it may form the nucleus of a larger stone ; it is seldom dissolved. Either after this attack, or without any such attack, the patient will feel frequent pain in his back, either in cold weather or

when exposed to cold by want of proper clothing, or after leaning over a table in reading or writing, or when bent in the performance of any manual labour. The pain is sometimes very acute and distressing, and shoots from the loins down one or both thighs. It is usually called rheumatism and treated with liniments; but it is an affection of the kidneys, the action of the formidable lithic acid. At the same time, the stomach is constantly disordered: acetous fermentation and distressing heartburn are of daily occurrence; a frequent uneasiness pervades the whole frame, sometimes producing nausea and even fainting; whilst transient but acute pain, sometimes in a finger, sometimes in a hand, or in a foot, or on the cheek, or over an eye, or in any other part of the body, inflicts a pang and is gone in a moment. These disturbances are certain indications of gout, and when not obviated, a decided fit of the disease at length comes on, like a hideous virgin clasping her horror-stricken bridegroom in her arms, to remain "bone of his bone, and flesh of his flesh," or as a monster come to seize an unwilling bride.

When any of these symptoms appear, let the diet be carefully attended to, the quantity of animal food diminished, and the warm bath and friction used until the pain in the loins has disappeared; then let the shower bath or the sponge and cold water be resorted to every morning, and subsequent friction employed with hard towels and the flesh-brush,—using the warm bath, during

from forty-five minutes to an hour, once a week. The heartburn should be checked with fifteen grains of bicarbonate of potash, dissolved in half a pint of lukewarm water. Should there exist a general dyspeptic habit, eight grains of magnesia ponderosa may be added to the potash. If the bowels are constipated, let one ounce only of Epsom salts be dissolved in a quart of cold water, and a wineglassful of the solution taken every morning, five minutes before breakfast, until the bowels are properly regulated. Until the recurrence of heartburn has ceased, boiled rice rendered palatable with a little butter and pepper and salt should be taken for breakfast, accompanied with a little tea. This should contain no sugar; for sweetened tea and dry bread and biscuit readily ferment and often produce heartburn. Cold water, or toast and water, should be made the ordinary dinner beverage, with an occasional glass of wine taken not every day but at distant intervals, like "angels' visits." Spirits should be rejected FOR EVER, malt liquor as much abstained from as possible, and not used at all until long after every one of the above described symptoms has disappeared. Plenty of exercise should be taken in the open air, and as much muscular exertion as will bring all the muscles of the body into play without causing fatigue. These instructions for encountering and driving from the field the premonitory symptoms of gout may be summed up in three words: CLEANLINESS, TEMPERANCE, EXERCISE; and if they be followed strictly and

constantly, in the spirit of those principles which I have before indicated, gout may be kept off during the whole period of existence.

There is a very prevalent notion, existing even among many English medical men, that the warm bath is weakening, and apt to increase debility. This is an error, which I have endeavoured to refute in the preceding Chapter. THE WARM BATH STRENGTHENS AND INVIGORATES. After immense bodily exertion it restores the tone and equilibrium of the whole system, completely renovating, like sleep, the vigour of the body without excitement. It is true that inconvenience has arisen by taking it at too high a temperature. The warm water should never exceed blood heat or a few degrees above the ascertainable temperature of the body, unless under the direction of a medical man. As the water cools, this temperature may or may not, at the option of the bather when in health, be kept up by the addition of hot water from time to time; but when an invalid is bathing, the temperature should be maintained steadily by the addition of hot water, and the heat measured by the thermometer, unless the contrary is directed by the medical attendant.

I shall conclude this Chapter with a short extract from Dr. Andrew Combe's *Physiology*,* a

* The Principles of Physiology applied to the Preservation of Health, and to the Improvement of Mental and Physical Education. By Andrew Combe, M.D. Fifth Edition. 1836. Edinburgh : Maclachlan and Stewart. London : Simpkin, Marshall, and Co.

beautiful and invaluable work, which should serve every man as a text book of health, and which every mother of a family should study until she knows it by heart.

" If the bath cannot be had at all places, soap and water may be obtained everywhere, and leave no apology for neglecting the skin ; or as already mentioned, if the constitution be delicate, water and vinegar, or water and salt, used daily, form an excellent and safe means of cleansing and gently stimulating the skin : to the invalid they are highly beneficial, when the nature of the indisposition does not render them improper. A rough and rather coarse towel is a useful auxiliary in such ablutions. Few of those who have steadiness enough to keep up the action of the skin by the above means, and to avoid strong exciting causes, will ever suffer from colds, sore throats, or similar complaints ; while, as a means of restoring health, they are often incalculably serviceable. If one tenth of the persevering attention and labour bestowed to so much purpose in rubbing down and currying the skins of horses, were bestowed by the human race in keeping themselves in good condition, and a little attention were paid to diet and clothing,—colds, nervous diseases, and stomach complaints, would cease to form so large an item of the catalogue of human miseries. Man studies the nature of other animals, and adapts his conduct to their constitution ; himself alone he continues ignorant of and neglects. He considers himself as a being of a superior order, and not

subject to the laws of organization which regulate the functions of the inferior animals; but this conclusion is the result of ignorance and pride, and not a just inference from the premises on which it is ostensibly founded."

Having shown, to the conviction I trust of my readers, the necessity of a daily use of the bath and of cutaneous friction, I shall next inquire into the superior advantages of sea-bathing.

CHAPTER III.

ADVANTAGES OF SEA-BATHING.

THE benefit derived from bathing in rivers or ponds of fresh water is sometimes very great, from the sudden shock and consequent reaction produced on the system, provided the first be not disproportioned to the strength of the bather. At the same time, the short exposure of the body to the pure and bracing fresh air is very advantageous by the chemical action of the atmosphere on the pores of the skin, provided this latter be in a proper condition to render such action available, and the air be not too cold. But even in healthy persons, this mode of bathing, which is connected with the exercise of swimming, of which I shall have occasion to speak hereafter, should not be resorted to more than twice or three times a week, and not then if attended with any chilliness or lassitude. The water likewise should be clean and limpid. There is considerable danger attached to bathing in muddy, stagnant pools, not only on account of the miasmata which are necessarily

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with which it is always in a state of creamy mixture. The Wye and the Avon share this peculiarity with the Severn, as do the estuaries of some of the Welsh rivers which run into the Bristol Channel. Indeed this Channel itself is in the same dirty state as the rivers whose waters it receives, and is therefore as ill adapted for sea-bathing as these rivers are for ordinary river-bathing.*

In the fresh waters of rivers and ponds, there is almost always an inequality of temperature arising from various causes, some of which are attended with danger. Of these latter, the most dreaded by swimmers are the cold springs rising from beneath the bed of the water, and bearing an extremely low temperature compared with that of the surface of the stream. Such springs are most common in ponds and other stagnant waters, though often found in running streams. They cause a sudden chill of some part of the body as the swimmer passes over them, and often produce cramp, which, unless assistance is at hand, leads to a fatal result. In the Serpentine in Hyde

* This state of the Bristol Channel is the cause of a singular appearance where it meets the Irish Channel. The waters of the two channels do not blend and mix with each other, but roll on side by side towards the Atlantic, till the clear rivers and waters from the rocky coast of North Devon impinge upon the Bristol waters, and a muddy stream is thus escorted down channel by a clear one on each side. The line between these waters is so strongly marked, that if a vessel were on it, a bucket of clear water might be drawn up from one side, and of dirty water from the other.

Park, and in the water of the inclosure in St. James's Park, persons are frequently drowned from this cause.

Sudden and partial changes and inequalities of temperature are injurious to invalids who seek in river-bathing a cure for their complaints. Their object is to impart tone to the skin by a shock and its reaction; but if, during the immersion, a partial change of temperature takes place and a stream of colder water, coming in contact with any part of the body, destroys the equability of the temperature, a counter-action ensues which disturbs the equilibrium of the bodily heat, and the bathing is often succeeded by chilliness and lassitude. Similar consequences ensue if a cold spring or under-current strike upon any part of the body, when, in the height of summer, the power of the sunbeams having raised the temperature of the water as high, or nearly so, as that of the skin, the person in health or the invalid attempts to enjoy the benefit or the luxury of tepid-bathing in a running stream under the shade of a tree; a most delightful and refreshing kind of bath, when of uniform temperature.

Cold fresh-water bathing in ponds or rivers is always accompanied with some of these drawbacks, which considerably counteract the benefits that otherwise result from the principle of their action. Such baths, it is true, may be applied at home, though without the luxury of the fresh *air or the exercise of swimming*, with as good and *certainly with a more uniform effect*. The very

best fresh river bathing should therefore not be resorted to daily, because the counter-action, produced by inequality of temperature, sometimes imperceptible to the bather, interfering with the regular action and reaction sought, thereby gives a greater trial to the system. Such as pursue cold river bathing, as a promoter of health, would do well, under such circumstances, to substitute the shower-bath, or the sponge-bath at home, at least four days out of every seven.

Sea-bathing is not liable to these objections. The temperature of the sea, both in the estuaries into which it flows and on the open coast, is in a uniform state of warmth, and therefore free from cold streams which give a fresh chill to the body after immersion. The sea, then, is the best adapted to produce that action and reaction from which the benefit of cold bathing is derived. The salt which the ocean holds in solution has also a stimulating effect upon the skin, which it prevents from chilling. The sea air is likewise impregnated with minute saline particles which act beneficially upon the skin, and preserve invalids of even very relaxed fibre and sensitive constitution from catching cold. Sea-bathing may therefore be used with advantage when fresh-water bathing would be injurious; and exposure to the sea air may be hazarded with safety, even with benefit, when the same exposure at a distance from the coast might induce cold and fever. The stimulus of the sea water and sea air, obtained in bathing for health, as well as for amusement—and

I shall have occasion in the course of this work to show the difference between the two kinds of bathing—gives tone to the vessels of the skin, by exciting them to action if dormant, or to greater action if relaxed. This invests them with a power to resist the ordinary vicissitudes of atmospheric temperature, proves a certain protection against cold, wards off disease to a very remarkable extent, and cures a great number of complaints which bathers bring with them to the sea coast.

There is another thing to be observed, in enumerating the advantages of sea-bathing: the difference of general temperature existing between the water of rivers and ponds, and that of the sea, the fresh water being always much colder than the salt. Young children, and delicate adults, especially ailing girls who, from *hyper-medication* and other mistakes during their progression from childhood to puberty, are never in possession of perfectly robust health, would often derive benefit from bathing in the open air, if they could with safety encounter the temperature of the cold water, which, not to injure such frail temperaments, ought to be at least equal to if not above that of the atmosphere. If they underwent its shock when too low in temperature, the consequence would be shivering, cold, fever, and perhaps the development of a latent tendency to pulmonary consumption. This frightful disease, which annually fills half our island with mourning, fixing its remorseless fangs in preference upon the young, the lovely, and the highly-gifted in mind,

is caused by a deposit of tuberculous matter on the lungs, thereby forming a series of ulcers which never heal spontaneously, but, like the fluke-worm that feeds upon the vitals of the sheep that breeds it, go on devouring the viscera in which they are formed until their action is closed by the destruction of the organ and by death. When the tendency is organic or hereditary, the least exciting cause may awaken the dread disease; when accidental, it may be called into existence by a single cold or catarrh, provided there is a predisposition by sickliness of constitution, attended with a narrow chest or curvature of the spine, brought on often by a disordered state of the skin and consequently of the stomach, and, in females, by an improper pressure of the stays. Persons of this description, who could not encounter cold bathing in fresh water without danger, would, at the very outset, derive the most strengthening and beneficial effect from sea-bathing. There are perhaps some extreme cases in which shivering and languor might succeed even sea-bathing, in which case sea-water should be warmed a little and used at home in the form of a shower-bath. Even this, in almost every case, might be daily reduced in temperature until the skin approached the normal condition, and the patient became sufficiently robust to encounter the temperature of the open sea.

As a bath of recreation, and to enjoy the amusement and exercise of swimming, assuredly the salt water is preferable, not only from its

equalized temperature, and the absence of cold springs, but from its superior specific gravity and the consequent greater resistance it offers to the strokes of the swimmer, by which, whilst he floats much higher out of the water, he is propelled with greater velocity and with less exhaustion of strength. The swimmer in fresh water has great difficulty to keep his mouth out of the water; the swimmer in the ocean proudly bears his head, chest, and shoulders above the crested wave.

The salts held in solution by sea-water, vary slightly, in different parts of the world, in their proportions, and in some parts of the globe contain matters not existing in other parts. This last difference arises perhaps from the particular substances with which any particular coast may be charged, as I am not aware that such difference is to be found in mid-ocean. The great principle or salting cause of the ocean, which most probably prevents its decomposition or putrefaction like fresh water, is chloride of sodium (common salt), which may always be obtained by evaporation. In most of the salt thus produced there will be found a small proportion of the following substances, or some of them:—carbonate of lime (chalk), carbonate of magnesia, and a very minute siliceous sand. The sea, though connected throughout the globe, is not so mixed as to form everywhere the same quantitative solution of salt. As rapidity in the putrefaction of water is generally *in proportion to the heat of the atmosphere,*

nature has made that part of the ocean belonging to the torrid zone much saltier than in colder regions. Thus, in the Baltic, the waters of the sea contain only one sixty-fourth part of their weight in salt ; on the coast of England, the proportion is a thirty-second part ; on the coast of Spain, where the temperature of the atmosphere is nearly if not quite as high as within the tropics, the proportion is one sixteenth part ; whilst in the Indian Ocean, and in the Gulf of Mexico, the proportion of salt is still greater. In very warm climates likewise the vessels of the skin, being more relaxed, require a stronger stimulant to excite them, which condition is fulfilled in sea-bathing, by the greater quantity of salt contained in the waters of the ocean belonging to such climates.

The salting principle, then, of the ocean, and that from the action of which on the skin we expect to derive benefit in sea-bathing, is common salt, or chloride of sodium ; that is to say, a salt consisting of chlorine, combined with a metallic base, called sodium, which base, when combined with oxygen, forms the well-known substance termed soda. Now, chlorine is a general disinfecting agent, which acts upon and destroys the miasmata arising from putrid matter, especially animal matter. In its pure form it is destructive of animal life, from the impossibility of breathing it ; but mixed with one thousand times its bulk of atmospheric air, it becomes the most beneficial agent known in removing bad smells and infec-

tion, and keeping houses free from the effects of *malaria*. In this state it can be breathed with impunity. As chlorine is likewise the bleaching principle, it is very extensively used to bleach linens and cottons; and, wherever a bleaching establishment exists, it is a blessing to the country around because it destroys the seeds of febrile infection which, floating through the air, range from dwelling to dwelling. And yet there was an instance, two or three years since, of such an establishment being indicted as a nuisance for the very cause of the benefit derived from it: the spreading of chlorine gas through a naturally-tainted atmosphere. On the trial, two medical men gave evidence that it was a dangerous and dreadful nuisance, whilst a third, more enlightened, declared it to be, from its disinfecting properties, the greatest benefit ever conferred upon the country. Of course, the two opposing medical men found the establishment a nuisance to themselves, as it prevented the propagation of disease; a circumstance, no doubt, appreciated by the jury, who gave a verdict for the defendant.

Chlorine is the principle that acts in preserving meat when salted, and is that, no doubt, which renders salt so necessary to man as a condiment for his food, and so necessary likewise to the brute creation, especially to cattle, which in large continental tracts far removed from the sea, could not exist without it. The hope of receiving a small portion of salt will entice the animals daily to return, from a free range in the boundless forest,

to the houses of their owners; and it is this enticement which, in the extensive pastures of America, prevents the graziers from losing their stock.

I have before observed that chlorine has a strong action upon putrid animal matter. It destroys in an instant the offensive effluvia from the fermented mixture of perspiration and epidermal scales found upon the bodies of the unwashed multitude, if applied in the form of the solution of chloride of lime, or that of chloride of soda*, one part of either solution being diluted with thirty parts of water. Dr. Pariset, the director of the French medical commission sent to Egypt to investigate the causes of the plague and its infecting power, relates that having mixed one part of Labarraque's chloride of soda with thirty of water, and soaked in the mixture, during forty-eight hours, the clothes of some persons who had just died of plague, these clothes being covered with matter from the plague ulcers, he and his brother physicians of the French Committee, put them on the moment they were dry, and wore them next their skin during a whole fortnight, the chloride having totally destroyed the plague infection. This shows how powerfully the most diluted portion of chlorine will act, since, besides the thirty parts of water, the chlorine of the concentrated chloride is in itself very dilute, and may not only be breathed without any sensible taste,

* A disinfecting chloride, discovered by M. Labarraque, of Paris, and termed by him "Chlorure d'Oxide de Sodium."

and without the least distress to the lungs, but taken with impunity into the stomach.

These facts prove that the most minute particles of chlorine exercise an extensive and powerful action upon putrescent and putrid matter. But sea salt contains a very large quantity of chlorine, for it shows by chemical analysis, four parts and half of chlorine to three of sodium. This enormous quantity of chlorine is however quite harmless in the form of chloride of sodium, whilst it preserves its anti-putrescent and stimulating properties. Neither will it be decomposed in the exercise of its powers, as sea salt, on account of chemical affinity or attraction, unless acted upon by potassium, or by one of the mineral acids. Hence it may reasonably be inferred, what experiment has proved to be the case, that most of the cutaneous disorders arising from the dirty condition of the skin before described in this work, will be relieved by sea-bathing, and by the use of the warm bath of sea water. No doubt where it is not convenient to go to the sea-coast, a solution of common salt in the fresh-water warm bath will be found of considerable efficacy; but unless used to excess, and then it causes too great irritation, the action of salt so dissolved is never so decided and so beneficial as the saline solution formed by Nature's own hand, and accompanied by the peculiar quality of the sea air.

Some of the cutaneous disorders arising from filth and epidermal accumulation, which begin

externally and are infectious, require necessarily, in addition to salt, sulphur in some or other of its forms. Hence the benefit derived in itch, and complaints of a similar nature, from sulphurous friction, or from bathing in sulphuretted or rather in hydrosulphuretted thermal springs. In these springs a greater or less effect is produced according to their temperature, the most beneficial amount of heat being from 90° to 120°. In Germany many of these springs reach 200° and 210° Fahrenheit, being perhaps at a considerably higher temperature underneath. Having used these means against a specific complaint, the moment the effect is obtained, sea-bathing should be resorted to, in order that with its aid and by the practices already mentioned, the body may be brought into the most robust state of health.

September is generally considered the best month for sea-bathing, though those who reside on or near the sea coast, find it, I believe, very immaterial at what season of the year sea-bathing is used, provided the weather be not too cold. The same beneficial effect arises when the atmosphere is genial, and the shock not unreasonably great. That bathers may be governed by their feelings I need only repeat that while the bathing is succeeded by a pleasurable sensation and buoyancy of spirits, it may be continued ; but if it be followed by chilliness, shivering, and languor, it should be discontinued till the weather is more favourable.

There is a very good reason why September is indicated as the most favourable month for sea-bathing, notwithstanding the equinoctial gales which prevail during that month. In September, most persons of business in London are able to leave their desks for a while to enjoy the fresh air of the country, and, if they are invalids, to try sea-bathing. At the same time many medical men enjoy a similar indulgence, and, in order to combine profit and pleasure, proceed to the different watering-places, where they most probably meet many of their habitual patients, and often obtain new ones. Hence September is always recommended as the best time of the year to begin sea-bathing, which, according to some medical writers, should be continued till the end of November. I have seen much benefit derived from sea-bathing in May, June, July, and August. In April generally, the atmosphere is too cold for delicate persons to expose themselves to its influence, as such exposure might be attended with danger. The climate, however, throughout the coast of England, differs greatly; and, for an invalid to whom a speedy use of sea-bathing would be beneficial, or on any sudden emergency, at an early or late season of the year, that part of our southern coast should be selected, which being the most sheltered from the bleak north and east winds, offers the most genial atmospheric temperature.

But the true reason why September is selected as the best season for sea-bathing, is because

it is that part of the year which fashion has marked out for visiting watering-places, as they are termed, on the sea-coast. When that month approaches, lodgings are sought and obtained at the most extravagant prices in those little towns to which the name of "watering-places" has been given. Persons of rank and wealth flock thither from their commodious country mansions, to undergo, in the little hovels, often dirty, for the temporary use of which they pay exorbitantly, privations and discomforts, of which they would "make sad complaint" under any other circumstances. This they do, because not to follow the dictates of the empty-brained nymph, cycled FASHION, would bespeak a want of acquaintance with the forms of civilised life. With the same feeling the merchant leaves his desk, the shopkeeper his counter, the attorney his torture-inflicting papers, the apothecary's apprentice his pestle and mortar, to congregate for a few days at the same place, sleep in the bed and bedroom of a pigmy, and bathe or swim for a day or two in

The sea, the sea, the open sea !

Fashion, however, should not be allowed to interfere with health; and if those fair votaries of this silly, blue-eyed maiden, who lead the ton, and spend the London season in a whirl of dissipation, would steal but a few days in May, and speed to the nearest part of the coast proper for sea-bathing, they would find, by a few plunges in

the salt ocean, their power greatly increased of enduring the remaining month of dissipation, before they left town at the close of the season to rusticate and recruit their strength prior to opening the autumn campaign at a watering-place.

With reference to warm-bathing as an act of cleanliness as well as of health, and to subsequent friction for keeping the skin in a state of healthy action, there is less fault to be found with the upper than with the middle classes, the former being as fond of the bath as needs be wished, a fondness which many have acquired on the continent, and, finding the advantage of it, have forced it upon their children until the habit has been taken and the comfort appreciated. This is the reason why, in England, a clearer and more beautiful complexion is always to be found among the upper than among the middle and lower classes of society. This is also the reason why those ladies who live in the world of fashion, feel less inconvenience from such an expenditure of physical power as their round of dissipation causes, than they would do under a relaxed fibre for want of the warm bath and friction. After many hours of the most arduous exertion, to get up and entertain a large party, or to attend a succession of parties, not going to bed until the greater part, perhaps the whole, of the night is past, warm bathing, and long friction with the flesh-brush or flannel, renovate the exhausted frame, and fit it for a *continuation* of similar excesses. During such a period of pleasure (?), three or four sea-baths,

taken in a marine atmosphere, would prove a rejuvenating power to those fair followers of what their better judgment, did they allow it to act, would condemn as absurd and foolish. The very excitement of the journey would do good; and now that railways are in progress of construction to all parts of the coast, by having their carriages attached to the train, they might be whisked to their sea-bath at the rate of thirty miles an hour.

In doing justice to the cleanliness of the upper classes in England, it is right that I should except certain persons in whom the hydrophobia is as strong as in those much beneath them in rank. Among these are ladies who fancy they are too delicate to bathe; others, who, being in the habit of using rouge and pearl powder, never allow a drop of water to touch their skin; others, who are enamelled, and therefore cannot use water without danger of spoiling their features. There is another class consisting of both sexes, who from indolence, or from having become, by over-indulgence, too unwieldy, cannot, without much discomfort, bathe at home with even the assistance of their valets and maids, much less use the flesh-brush. To each of these classes of persons I would offer a word of advice, by following which they may probably avert all the evils which they dread. The delicate lady need not fear the water—it will strengthen her. The painted lady need not dread the effect of the salt water on her skin: the subsequent friction will make it supple and healthy, whilst a little cold cream v-

restore softness to her face, neck, and hands. The enamelled lady is sure to be in a state of disease, because the pores of her face and neck are closed. Let her remove the enamel, or she will die. For her there is no other remedy. The indolent or obese lady or gentleman would find considerable relief from a few dips in the ocean, and plenty of hard rubbing after it, with hard towels and the flesh-brush applied by the strong arm of a valet or a waiting-maid. The invigorating effect of the first bath would surely induce the trial of a second ; and a continuation, attended with careful diet and exercise, gentle at first, but gradually increased, would soon reduce corpulency, counteract indolence, and restore to comfort those who are a burthen to themselves.

CHAPTER IV.

SOME OF THE DISORDERS FOR WHICH RELIEF IS SOUGHT IN SEA-BATHING, AND OBSERVA- TIONS THEREON.

THE disorder most generally prevalent in our island among the various classes of society, is dyspepsia. In the affluent, it is usually produced by excess of food, with or without excess in the use of vinous, and spirituous liquors; the evil being often increased either by self-medication, or by an injudicious administration of medicine by a professional man. In the sedentary, it arises from various causes, combined with a want of proper muscular exercise. In those occupied by study, by literary or professional pursuits, all these causes unite with that of an excessive action upon the brain, which operates prejudicially upon the whole body, debilitating the stomach and throwing the nervous system into disorder. In the poor, dyspepsia usually proceeds from the use of unwholesome and badly cooked food; from debility arising from want of proper nourishment; or

the salt ocean, their power greatly increased of enduring the remaining month of dissipation, before they left town at the close of the season to rusticate and recruit their strength prior to opening the autumn campaign at a watering-place.

With reference to warm-bathing as an act of cleanliness as well as of health, and to subsequent friction for keeping the skin in a state of healthy action, there is less fault to be found with the upper than with the middle classes, the former being as fond of the bath as needs be wished, a fondness which many have acquired on the continent, and, finding the advantage of it, have forced it upon their children until the habit has been taken and the comfort appreciated. This is the reason why, in England, a clearer and more beautiful complexion is always to be found among the upper than among the middle and lower classes of society. This is also the reason why those ladies who live in the world of fashion, feel less inconvenience from such an expenditure of physical power as their round of dissipation causes, than they would do under a relaxed fibre for want of the warm bath and friction. After many hours of the most arduous exertion, to get up and entertain a large party, or to attend a succession of parties, not going to bed until the greater part, perhaps the whole, of the night is past, warm bathing, and long friction with the flesh-brush or flannel, renovate the exhausted frame, and fit it for a continuation of similar excesses. During such a period of pleasure (?), three or four sea-baths,

large doses, that the evil was increased rather than obviated. When I first saw him, he had several times taken small doses of calcined magnesia, half a tea-spoonful of which produced excessive purging for two days. I asked him if he had ever tried the warm bath and cutaneous friction. He said he had not. I recommended that he should give it a trial.

"Nonsense!" he replied; "nature never intended that man should be dependent for his health upon warm or cold water and skin-rubbing."

"You might as well say," I observed, "that nature never intended the horse for the curry-comb, and yet you well know that this domestic animal will not preserve its health without the application of such an instrument. Or you might with equal justice object that nature never intended the human body for a flannel waistcoat, although you invariably recommend one to each of your patients."

"There is something in your argument, and it corresponds with physiological science: I will therefore try the bath, and have my hide rubbed to your satisfaction."

He performed his promise;—the result exceeding my most sanguine expectations. During his course of bathing, he took occasionally twelve grains of bicarbonate of soda mixed with seven of calcined magnesia, and no other medicine whatever, using only the enema sometimes. In the course of a month he was so well that he went to Ramsgate, and bathed in the sea four times every

in the use of malt liquor frequently adulterated with narcotic drugs, and of ardent spirits generally of the worst kind, and occasionally falsified with strong, acrid, and deleterious substances. In these different classes, the undue performance of the functions of digestion, and the consequent state of the alimentary canal, are, in the generality of cases, materially increased by the unhealthy and uncleanly condition of the skin, described in the preceding chapters. This is so true that no professional care, no medicines, no exercise, nor the most careful diet, will remove the complaint and bring the body to its normal condition, until the skin is acted upon in the manner I have before indicated, and restored to health. And it will be perceived that, in proportion as this takes place, the proper remedies judiciously applied to remove the disease, will be attended with a more beneficial action until the cure is perfect.

In illustration of this, I will mention a case. I once knew a medical man in London who was a martyr to dyspepsia. He had tried everything during four years to subdue the complaint. Violent medicines and the action of calomel had only increased the evil: the stronger the aperients he took, the greater was the subsequent costiveness produced by reaction. He scarcely dared to eat, and his life became burthensome to him. Whatever food he took fermented in his stomach about an hour after, and produced the most distressing heartburn. He had used the bicarbonate of soda at first in small, but afterwards in such

large doses, that the evil was increased rather than obviated. When I first saw him, he had several times taken small doses of calcined magnesia, half a tea-spoonful of which produced excessive purging for two days. I asked him if he had ever tried the warm bath and cutaneous friction. He said he had not. I recommended that he should give it a trial.

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week, taking a warm sea-water bath at about blood heat once in each week, using daily friction and the sponge and cold water each morning he did not bathe in the sea. In a month he returned quite well, and by constant attention to his skin, with the use of water, coarse towels, and the flesh-brush, being cautious in diet, abstaining from excess of any kind, and using due muscular exercise, he has ever since remained in robust health, and has cured a number of patients of the same complaint.

A mercantile man in London, after sitting in his counting-house often during eight, nine, and even ten successive hours, abstaining from refreshment during this time lest he should spoil his dinner, to get an appetite to which he perhaps walks to his dwelling, sometimes a distance of two or three miles, thereby increasing the already weakened condition of his body, will on his return home overload his stomach with rich dainties, washed down with a considerable quantity of strong-bodied wine. In this daily state of repletion, if apoplexy does not at length carry him off, he becomes dyspeptic, nervous, perhaps more or less hypochondriacal. Meanwhile, his skin remains quite guiltless of aqueous detergents and friction, which circumstance adds greatly to his complaint. He seeks relief in strong medicines, which afford only a partial relief, but increase the disorder. When at length he approaches the incurable state, to which *a little reasoning* would have admonished him that *he must at last arrive*, he is ordered to the sea-

coast for the benefit of sea-bathing, after having fruitlessly tried the waters of Bath and Cheltenham. Or perhaps before this irremediable condition is determined, he takes each year the benefit of a week's sea-bathing at Margate, or Ramsgate, or Broadstairs, and then returns to his counting-house and his luxurious food, whilst his body feels no water till the ensuing year, and certainly his skin receives no friction.

The London shopkeepers and other tradespeople act much in the same manner, and with the same effect. Their dyspepsia is generally brought on by overloading the stomach already weakened by sedentary habits, long standing, or muscular labour, with half-raw animal food and semi-crude vegetables, and resuming their occupations immediately after. Some of these have the benefit of an annual eight day trip to Margate, to resume their old habits on their return. The Bristol shopkeeper does worse: he takes *his* trip to Portshead, or to the lovely town of Clevedon in Somersetshire, there to bathe on a stinking, muddy bottom, and expose the absorbents of his skin to the action of the alluvion teeming with decomposed vegetable and animal matter carried into the Bristol channel principally from the Severn, the Wye, and the Avon, and which, though excellent for fertilizing land, is not very friendly to the human frame.

The student, who applies himself with unremitting labour to acquire knowledge, without taking any muscular exercise, or paying attention to his

skin, but usually inhabiting a close room, deprived of the necessary ventilation, if he escape pulmonary consumption or curvature of the spine, is almost invariably troubled with dyspepsia. If, when the premonitory symptoms of this complaint appear, he would relax for a time, take proper exercise, attend to his skin and diet, and go to the sea-side for a month, keeping his mind in a state of re-creative relaxation, and his body under a proper discipline of sea-bathing and friction, a man of genius might often be saved, and prove a bright ornament to his country, instead of a promising youth becoming imbecile or dying of pulmonary consumption. Between the ages of sixteen and twenty-four there is more excitability in the human frame, and a greater expenditure of life, than at any former or subsequent period. Inflammatory action is therefore more easily induced. After this latter age, the process of formation, which I described in a former chapter, goes on gradually, with a slower pace, until it ceases at forty; consequently, after the twenty-fourth year, the chance of violent constitutional irritation, of dangerous colds and catarrhs, of pulmonary consumption, is diminished; whilst after forty, the latter dread disease seldom occurs.

Literary men, when the brain is acted upon by intense thought, without proper exercise and relaxation, invariably injure the functions of digestion, and become troubled with a *stomach complaint*. This is usually aggravated by want of attention to diet, often by excess in food and wine,

by an imprudent use of mercurial and drastic medicines, and by the state of the skin arising from neglect, uncleanliness, and consequent relaxation of fibre. The employment of the brain in producing works of literature and science, diminishes more or less the nervous excitement necessary for the health of the body, which is thereby impeded in the action of its mechanism, the stomach being usually the first organ affected, then every other in succession. Thus, there is a constant reaction upon each other of the stomach and the brain. And when this labour of the brain is continuous and unrelaxed, the body becomes cold and shrunken, or else bloated; likewise the temper is soured, the merest trifles causing annoyance and vexation, sometimes dangerous paroxysms of anger, succeeded by an absolute prostration of strength. If this goes on during any considerable period, it either wholly breaks up the constitution and causes death, or leads to mental alienation.

Sedentary and studious habits, without any of the other causes I have mentioned, are in themselves sufficient to reduce the extent of life to its shortest span. Communities of learned bodies, therefore, where many regulations and practices still prevail derived from the old monastic institutions, scarcely ever show instances of longevity among those studious and sedentary members who adhere rigidly to their habits of close confinement and thought.

Another cause of stomach complaints in adults is the mistaken practice of parental medication

during infancy, and self-medication after the age of puberty, both to relieve the effects of previous physicking, and to counteract those of intemperance. But as I shall have occasion to speak of this in the next chapter, I shall here allude to it no further.

Many young females from parental medication, and from another which I am going to mention, grow up to be sickly and delicate women, scarcely ever enjoying health for a week together. They become unhealthy mothers, producing unhealthy offspring, often with the forfeit of their lives. This latter frequently arises from malconformation, or personal deformity, brought about by the practice of which I am about to show the evil consequences : namely, the use of stays.

All physiologists and medical practitioners are agreed concerning the injury arising from the pressure of stays. Woman, however waspish she may sometimes be in disposition, was never intended to appear to the eyes of mankind in the form of a wasp. A free expansion of the cavities of the chest and abdomen are requisite for the purposes of life ; and these are incompatible with a supernaturally small waist, squeezed into such minute dimensions by the pressure of stays, a use of which from childhood causes, at the age of puberty, the muscles of the back and abdomen to be shrunken and worthless. Whenever a particularly small waist is seen in a woman, it is a deformity, and bespeaks as plainly as tongue could do an abnormal condition of the body, and there-

fore an imperfect state of health. In the most ruddy and blooming females, such a form of waist is incompatible with health, and therefore the judgment is not to be cheated by the appearance of a pair of rosy cheeks or sparkling eyes, both frequently arising from a determination of blood to the head, brought on by pressure of the stays on the chest and stomach ; the pressure upon the latter organ when distended with food, frequently producing, even in very young persons, sanguineous apoplexy and instantaneous death.

Stays are commonly put upon children six or seven years old with a view to controlling their growth and giving them good figures ; as if nature was apt to err, and required correcting ! This controlling of the growth of children is just like the practice of those who, by pruning timber trees, pretend to correct and improve nature's work, whilst they inflict incurable injuries upon, and diminish the life of the tree, deteriorating at the same time the quality of the timber, just as the mother impedes the growth, by encircling with whalebone or steel the body of her child, who grows up to be a sickly and deformed woman. Take fifty of our countrywomen of the middle classes, and thirty at least shall be found afflicted with curvature of the spine, from the use of stays and from the privation of proper muscular exercise which they have forced the body to endure from the time the stays were first worn to adult age. Weakness of the loins and back is invariably increased by the use of steel and other

contrivances made to cure it. I once knew an establishment for young ladies in which every boarder but one—and there were fifty in the school—had curvature of the spine, and the right shoulder of each had grown considerably out of its place. This had been caused by the girls, with their stays on, being made to write for hours together every day on a flat table, upon which the left elbow rested, whilst the position of the arm to be able to write raised the right shoulder, and caused a lateral depression of the spine.

The natives of India do not use stays, and the children are allowed to grow without any impediment. The women of India are thereby remarkable for beauty of form. This is also the case among the American Indians, and among the still savage tribes of Polynesia. In our own country some rational physicians have, in their own families, prohibited the use of stays; the consequence is, that their daughters are the most beautifully formed of women, and might vie in elegance of contour and firmness with the statues of ancient Greece. I may also mention Miss Kelly, the celebrated actress, who never wore stays, and yet though now beginning to show “the sere and yellow leaf,” has still her perfect woman’s form unimpaired,—that form which has been admired by every play-goer during the last thirty years.

Pressure by stays, as every one will admit, totally breaks down the finest forms of nature at a very early age. There is scarcely a girl in

England whose beauty of shape, should she grow up straight, is not destroyed by this unnatural pressure long before she is twenty years of age. She is therefore obliged to continue to wear stays, in order to preserve a semblance of that purity and firmness of contour, which usually distinguish the young virgin from the elderly matron. The elastic step is impeded, and the graceful wave of body so elegant in women, totally prevented by the encasement of the whole figure, from the shoulder to the hip, in jean and whalebone, with a broad busk of whalebone, oftener of steel, oftener still of wood. As well might a woman be encased in wooden staves, and hooped like a cask : it would scarcely inflict a greater injury upon her than stays such as I have described, and which are worn by at least ninety-nine of every hundred women in England.

When a girl goes to school, if she has never worn stays before, they are now put upon her body, and the poor child is taught to look with a feeling of gratified vanity on what causes her great inconvenience, often great pain. If straight before, she will now perhaps begin to grow crooked ; and her spine gradually swerves from the perpendicular line, whilst the chest, especially in a weak and delicate girl, will be forced to contract for want of space. Can any body wonder that at the adult age, indigestion and stomach complaints, and worse, should result from such a system of physical education ? Ought children to be thus confided to the care of persons so ignorant of what

will render them healthy men or women? Their proper *physical* education ought to be provided for in Lord Brougham's Education Bill, and none allowed to take charge of youth of either sex, who are not conversant at least with Dr. Combe's Physiology, or some equally good text book, if it were possible to find such.

Stays having been worn from infancy, and the support of the body made dependent on them, by the destruction of all power of action in most of the muscles of the back, abdomen, and chest, to retain them becomes indispensable to those by whom they have been constantly used. The busk and the bones might, however, be left off gradually with excellent effect. Of course, I need not dwell upon the evil of tight lacing, further than by stating what I have said before, and which cannot be too often repeated—that it often leads to sudden death by apoplexy. There was an instance in London a very short time since, in the death from tight lacing, of a healthy girl only twenty years old. She died of apoplexy about an hour and half after she had eaten a hearty dinner, the action of the stomach being paralysed by the pressure of the stays, and the blood driven to the brain.

There is, however, a point connected with the lacing of stays, to which I beg to call the most serious attention of every female sea-bather who may read this little volume; and to which, could my voice extend so far, I would fain call the *attention* of every woman in the land, as it is a *matter of immense importance to all.*

Ever since the existence of long stays, it has been the practice of each female who has worn them in England, Ireland, and Scotland, to lace them from the top to the bottom, whereby a downward pressure is given. This habit of lacing is adopted because it is the easiest. The consequences of this practice are—first, a pressure of the busk upon the chest; second, a pressure forcing down the bosom, the stomach, and the intestines. I shall examine very briefly each in succession.

The pressure of the busk or front stiffener of the stays, made generally of steel or wood, bears heavily and painfully upon the *sternum* or breast-bone, producing a permanent bruise on the skin, and ultimately a disease in the bone itself. Not a female in a thousand received into any of our hospitals, but bears this mark upon her chest. And what is the consequence? Constant pain, and very frequently the breaking out of a torturing disease, which sometimes attends the sufferer to the grave. Come we now to the second consequence.

By the downward pressure given by downward lacing, the forms of youth are destroyed to be replaced by the appearance of age at the mere outset of adult life. But this is the least of the evils produced by this downward pressure, which very often leads to the most serious accidents. From the forcing downward of the stomach and intestines, these latter, from any sudden or violent exertion, or from fatigue and relaxation alone, are liable to be forced out, and to form hernia or rupt-

ture. I lately saw a housemaid, to whom this accident happened whilst she was in the act of carrying a tub of water up stairs. The disease I have mentioned, I regret to say, is extremely frequent among all classes who wear stays thus laced; and I cannot too strongly call the attention of mothers to this fact. How many girls are afflicted with this disorder, which it is the study of their lives to conceal!

It is almost as easy to lace the stays upward as downward, and the advantages of the former mode are very great: the upward pressure supports the intestines and prevents the accident of hernia, whilst there is no dangerous pressure upon the chest; indeed, the finger might be inserted between the busk and the breast-bone.

Ladies of rank and affluence, to whom expense is not an object, wear French corsets, which are laced upwards; and, though they do the same injury to the muscles of the body that every kind of stays does, they exercise no pressure upon the chest, and do not injure the figure, except when tight lacing produces a *deformed* waist. Our ladies of fashion, therefore, retain their beauty of form to an advanced period of life. I know the daughter of an earl, now sixty years of age, who, though she has had four children, has been touched by time with so lenient a hand, that not a girl of eighteen wearing English stays, could be found in the United Kingdom to vie with her in beauty and *freshness of form*. Let it, however, be understood, *that curvature of the spine arises sometimes from*

the use of French stays, though not near so frequently as from wearing English stays.

I have made these observations on stays, in the hope that they may prove useful. They are surely not out of place when sea-bathing is resorted to for many of the disorders they produce, and among others dyspepsia, nervous, and even hysterical complaints.

Let it, however, be understood, that sea-bathing is not presented here as a universal panacea. The good effects it may be expected to produce will require co-operating causes, such as attention to diet, proper exercise in the open air, a system of gymnastics suited to the strength and constitution of the patient, begun gently and gradually increased, and, what is of very paramount importance, daily friction of the skin with either flannel or the flesh-brush.

Where there are predisposing causes of pulmonary consumption in youth of either sex, arising either from a contracted chest occasioned by the confinement of study, from the use of stays, from any mistake in physical bringing up, from relaxed fibre, or from any other cause except hereditary predisposition, sea-bathing and daily friction will be found beneficial, though seldom ordered by medical men. But it must take place in a warm and genial country, sheltered from the bleak north and north-east winds—a condition to be found upon some parts of the southern coast of Devonshire. Even when the disease is already in its incipient stage, sea-bathing may help to check it. But I

shall have occasion to say more on this subject in a future chapter when I treat of the mode of bathing.

Disorders of the skin are those from which sea-bathers generally obtain the most prompt relief, from the reasons already assigned. In specifying such disorders I do not however pretend to include scrofula, when an hereditary disease; though by attention to diet and proper exercise, in co-operation with sea-bathing and the action of sea-air, I have no doubt that great benefit might be obtained.

In rickets, which in children arise from an unequal distribution of nourishment throughout the body, making the joints swell and the limbs bend and grow uneven, the legs having scarcely strength to support the body, sea-bathing usually produces great benefit; but it must be combined with plenty of exercise in the open air, without fatigue or much exertion to the child, who must be gradually brought to a course of easy gymnastics, very gentle at first. Daily friction with flannel must be used all over the body, until the surface of the skin is red, and in a glow.

Gout is not a disease for which, in general, recourse is had to sea-bathing; though either where there is predisposition, or after the exacerbation of the attack has subsided, it may be used with very beneficial effect. But assuredly during the most acute action of the disease, a hot bath of sea water is more effective than one offresh water; and even in the latter it is much better to dissolve

two or three pounds of common salt, than to use it without any such addition.

In my observations, in the last chapter, on gout, and the disorders springing from the same origin, I have overlooked a striking circumstance corroborative of the mode of proceeding which I there advise, and with which it may not be irrelevant to conclude the present chapter. In the premonitory symptoms of gout described, heartburn from acid in the stomach is one of the most distressing. The alkaline medicine there recommended, will sometimes fail to remove this heartburn; and if the bicarbonate of potash be used to excess it will do mischief, and so far from removing the sensation of heartburn, will cause its recurrence more frequently. Strong perspiration, however, will speedily remove it; and this perspiration might be obtained either by exercise, or by a warm bath, or by a vapour bath, if it could be had,—this latter being the preferable mode of inducing the perspiration. This is the reason why strong muscular exercise is always beneficial to persons of a gouty habit. The action producing this effect of perspiration in destroying the acidity of the stomach, I shall endeavour to explain.

The secretions of the intestinal or alimentary canal are all alkaline, with the sole exception of those of the stomach, which are acid, and are intended for the elaboration of the food into chyme. Now the water perspired through the skin, contains an acid, which must have been carried by the

absorbents into the blood whence the exhalents withdrew it ; and as no other part of the intestinal canal yields an acid, this must come from the stomach. Be that as it may, acid in the stomach is always more troublesome when the pores of the skin are closed, and sensible perspiration is not free. I have often remarked in particular individuals, that there was about them a smell of vinegar when they were in perspiration, and I have sometimes fancied that such was the case with myself. This is accounted for by its being ascertained, that the water perspired by the human body holds an acid in solution, which it has likewise been observed is more abundant in persons of gouty habit, and which for some time was supposed to be acetic acid, or vinegar, but is now, with more probability, considered malic acid, though the great chemist Berzelius thinks it is lactic acid. Might it not be some form of uric or lithic acid carried into the system, as always must be the case in gouty persons where calculi or chalk stones are deposited,—these stones consisting generally of lithate of soda ? This is the more likely because lithic acid, exposed to the action of chlorine, gives out malic acid, together with some salts of ammonia, and carbonic acid gas. This may account for the presence of malic acid in the fluid perspiration ; which acid may be produced from lithic acid under the action of chlorine. Though we are not yet very learned in the chemistry of the human body, it is but a reasonable hypothesis to imagine that chlorine may have

been evolved in some parts of the system by the decomposition of a portion of that chloride of sodium, or common salt, of which every human being swallows such quantities that the whole system is impregnated with it, as is evident from the salt taste perceptible in all the fluid secretions of the body, as well as in the blood.

CHAPTER V.

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ABUSE OF MEDICINE.

THERE is no country in the world in which so much physic-taking and empiricism are to be found as in England. In London alone more medicine is swallowed every year than in the whole of the habitable globe besides. Members of the Royal College of Surgeons advertise their skill and their secret remedies, placing themselves in competition with the doctors Solomon, and the doctors Jordan of the day, and Morison the Hygeist, and the long list of quacks who have for years past deluded the people of England with their Balm of Gilead, their Balsam of Rakisiri, their Universal Pills, and made fortunes by victimizing, both in pocket and in health, their deluded dupes.

Is it that the climate of England requires the use of calomel and drastics from the regular practitioners, and of pills from the quack doctors, to keep the body in health?—or is it that the people of England, from want of cleanliness and proper care of the skin, from sedentary habits, and from an abuse of food and strong drinks, the former *badly cooked* and indigestible, the latter frequently *improved with poisonous drugs*, recur to the doctor,

and to empiricism, and to self-medication, in order to find relief from the stomach complaints they have brought upon themselves? Be the reason what it may, and it is certainly not attributable to the climate, the abuse of medicine-taking in this country is monstrous, and attended with the most deplorable consequences.

This abuse is extended even to the cattle of the farm and to horses and dogs, as may be seen in all works on husbandry and on the veterinary art. Many a poor cow and sheep have been physicked to death by an ignorant lout of a labourer; whilst the medication of the noblest horses is intrusted to a conceited and doltish groom, that of dogs to a talkative and pert huntsman's helper; or both are perhaps undertaken by a lordly master himself, who has less brains than the horse he bestrides, but shows more ignorance, conceit, and self-sufficiency than the groom, and the huntsman and the pert helper, put together.

In the present state of that branch of the medical profession formed by surgeons-apothecaries, or general practitioners, there must of necessity be an abuse of medication. An apothecary, properly speaking, is one who compounds and prepares medicines for sale, on the prescription of a physician. Of course when the apothecary is himself the physician, there will be no want of drugs in the sick chamber even after the patient has left it, because, though as a physician-apothecary he may by law make a charge for his visits, his greater profits are derived

from compounding and selling medicines. The functions therefore of physician and apothecary are incompatible with each other. The system of *general practice* should be altered, and no medical man allowed either to provide his own drugs or to receive a per centage from a druggist.

But losing sight altogether of this question, I come to the practice of employing calomel and violent cathartics on every trivial occasion by professional men, imitated by half-informed persons, and leading not only to self-inflicted medication, but to the baneful practice of parents physicking their children on their own responsibility and without medical advice.

Most medical men, whether physicians, surgeons, or general practitioners, when they are not persons of great knowledge and enlarged mind, have a routine of practice from which they never swerve, and which every medical case must fit, like the patient fitted to the bed by being either stretched or by any undue length of limb being lopped off, or like the horses' foot fitted to the shoe by the hoof being burnt to its shape. Occupied by an extensive, perhaps a country practice, without time to read and acquire the information given by the latest discoveries of science, and unable probably to obtain *cases* for the improvement of their art, many exercise it just as they found it in their youth, and have a natural antipathy to the introduction of any recent improvement which they have not had time to acquire. The dogmatism and self-importance of

these men form a singular contrast with the retiring and modest demeanour of those great and able physicians to whom modern science and modern practice are so much indebted. Each practitioner of the routine school, has a favourite disease, as well as a favourite remedy for every disease : one patronises intestinal stricture ; another polypus in the heart ; a third, cancer in the stomach ; a fourth, nervous disturbance. With respect to favourite remedies, I know of one who in forty-seven prescriptions out of fifty writes decoction of aloes with or without blue pill ; and so wedded is he to decoction of aloes that he swallows it himself for his own private pleasure, to the great delight no doubt of the patient, from whose bottle he takes a portion, and whose misery of drug swallowing is diminished by the quantity taken by the doctor. I know of another whose pet medicine is calomel in enormous doses ; "because," he says, "this medicine when taken largely goes through the body at once, and is less dangerous than when the dose is small." As an ordinary aperient, to be taken at night before a dose of castor oil or a black draught, he orders from fifteen grains to a scruple of calomel ; and I have heard of his giving a child eight years old, who was labouring under a cold, thirty-six grains in twenty-four hours, being at the rate of six grains every four hours.

In favour of this latter medicine, which is used in no other country in Europe, except on very rare occasions, there is a most fanatic prejudice in

a great number of the ordinary medical men in this country. Calomel is certainly a most valuable medicine, when judiciously used in attacking inflammation, or to lower the system on any emergency. But each time it is used, the stomach and bowels have great difficulty in recovering from the shock. When frequently employed, therefore, it certainly abridges life, first laying the foundation of a series of diseases which embitter with pain and nervous excitement the last few years of existence. But why is calomel given as a common aperient? It has no specific cathartic action of itself; such action is obliged to be produced by some other opening medicine administered with it, or *exhibited* as the doctors say—though I cannot yet discover how giving physic to a sick person can be termed *an exhibition* of medicine. Why then, I repeat, is it *exhibited* as an aperient when it is not one, and most frequently in cases of dyspepsia, which it certainly aggravates? “There is an absence of bile,” says one, “and it stimulates the liver.” So it does, like all mercurial medicines in minute quantities, but taken in large doses, “it goes through the body at once,” as my calomel-giving friend says, and has therefore no action whatever on the liver and biliary secretion. Half a grain of calomel, or two grains of blue pill, taken each night for a week, will have a much more beneficial effect in exciting the biliary secretion. “It is a most searching medicine,” says another; “it acts strongly upon the glands, and scours the whole alimentary canal in cases of repletion.” So

it does. Let therefore the glutton, the gormandizer, the delighter in *feeds* of turtle and venison, the besotted indulger in ale and port wine, and brandy and water, stuff to the verge of suffocation if he list, and then scour out his stomach and intestines with calomel. Let him continue this system, and the scouring principle will soon have scoured away the lining membrane of his stomach.

Calomel is a chloride of mercury, as common salt is a chloride of sodium, both consisting of chlorine combined with a metallic base. But the one chloride is as hostile to the health of man as the other is friendly to it. Every body knows the effect of corrosive sublimate, when applied to the skin even in very minute quantities. Now, corrosive sublimate is a bi-chloride, or a double chloride of mercury, as calomel is single chloride; and the action of this latter, which is the *minimum* power, as the former is the *maximum*, is only a modified action of the corrosive sublimate. Let any mother fond of *calomelising* her children, put a small portion of calomel upon the tip of her tongue, or upon any part of her body where the skin is torn, and then say how she would like to have fifteen or twenty grains in her stomach, or a quarter of that quantity in the stomach of her child. I must, however, add that when calomel is combined with opium, its irritating effect is partially destroyed, whilst the action of the calomel greatly reduces the narcotic power of the opium.

Self-medication, or more properly speaking, self-

empiricism, with only a very limited knowledge of the structure and physiology of the human body, is positively a suicidal act on the constitution. But the practice of physicking children without medical advice is still worse; and the race of medicating mothers, who have sprung up during the last thirty or forty years, have, by this system, combined with improper pressure by stays, formed the race of sickly and debilitated girls, and by the physicking alone, the weak and puny breed of young men now so common among the existing generation of the middle ranks of society. Boys are kept at home by their mothers, protected from the "shadow of a breath of air," their bodies heated and irritated by excess of clothing, their appetites pampered because they have "no appetite," and their bowels opened by medicine every four or five days. A poor boy so treated reaches the adult age with an already broken constitution; he is sickly and debilitated during the whole of his brief existence in manhood, marrying perhaps a sickly wife, and leaving behind him a puny, stunted, and sickly progeny. A few years ago, I knew a very fine and promising boy eight years old, who being thus treated by his mother, was attacked with cold in the head, then bronchitis, or inflammation of the bronchia, then partial paralysis, then deafness, and is now at twelve years of age, stunted in his growth, deformed, extremely deaf, one side of his face drawn up, and *his tongue partially paralysed*, so as to render his articulation scarcely intelligible. I also know a

mother at this time, a very conceited and self-willed woman, who has five beautiful girls between the ages of four and eleven. For two years past, she has been physicking these poor children with castor oil, salts, senna, rhubarb, and jalap, and finding that they are now constantly ailing, has just discovered that they are bilious and require calomel, a course of which they are now actually enduring. So wedded is this lady to her particular notions, that it has been impossible to convince her that the ill health of the children proceeds from no other cause than the repeated doses of medicine which they have received from her hands.

Persons ignorant of the forms of dyspepsia generally fancy, whenever any of its symptoms appear, that they are *bilious*. This is also the reason assigned for indisposition whenever any of the ordinary consequences ensue from repletion, from charging the stomach with rich fatty food, or with any aliment to which it has an idiosyncratic repugnance. Thus, fresh butter makes one lady bilious ; onions render another bilious ; ale engenders *biliousness* in a third, port wine in a fourth, oranges in a fifth, and so on. The disease of *being bilious* was invented by a celebrated fashionable physician, who, at the end of the last and the beginning of the present century, dispensed medical advice and witty sayings among the upper circles of our social pyramid, until he had acquired considerable wealth and a well deserved reputation. Unable frequently to explain in a

manner intelligible to the fair ladies with the care of whose health he was entrusted, the nature and cause of their complaints, he would tell them in reply to their frequently embarrassing questions that they were *bilious*. Hence it soon became the fashion to be bilious, and the disease has prevailed among both sexes ever since up to the present time. When people of all temperaments and complexions began to be troubled with bile, each family apothecary, on the high authority of the great physician, found a good opportunity for exhibiting calomel and colocynth to cure *biliousness*, to say nothing of croton oil, which, though effective in four minutes by a small drop placed on the tongue, was encased in a rose-coloured draught and charged for accordingly. Until the invention of biliousness, self-medication was unfrequent; but this complaint, which now pervades all classes, has led to the practice, and almost to the maxim, "Every man his own doctor."

Any individual of the present generation who eats more than his stomach can digest, gorges gross food and commits excess in the use of fermented and alcoholized liquors, is bilious, forsooth, the moment he begins to feel either repletion or dyspepsia as the fruit of his intemperance. Pills of potent energy are used to obviate costiveness, whilst heartburn is corrected with the bi-carbonate of soda, that of potash, or the carbonate of ammonia, until the body is brought to a state of irremediable disease, aggravated perhaps by distressing calculi formed by an improper use of alkaline remedies.

All this disturbance might have been easily checked at first by a little self-denial, exercise in the open air, and bathing succeeded by friction.

In the comparatively few cases in which there is really disturbance from bile in the stomach, the exhibition of violent drastics is equally reprehensible.

The use of purgative medicines at all in dyspepsia is in most cases unnecessary. The seat of obstruction or costiveness is generally the colon, one of the lower intestines, which should be relieved by the enema without irritating the stomach. The operation of strong purgatives is followed by reaction, which produces costiveness, and another dose and another still succeed with very injurious effect. The best aperient medicines in dyspepsia, when they can be used, are salts; these act solely on the mucous membrane, exciting an additional secretion of mucus. It is the practice to take these in large doses of an ounce, or an ounce and a half dissolved in the least possible quantity of water. In this state they are very irritating, and are attended by a powerful reaction. An eighth part of an ounce of salts, dissolved in three quarters of a pint of water, is a most effective dose, and is attended with no reaction. In this form likewise, the salts act as a gentle tonic. The dose should be divided into two equal parts, and the second part taken ten minutes after the first. Five minutes after the second part is taken, a cup of hot tea may follow it. The salt usually preferred at present is sulphate of magnesia, or

Epsom salts. The least unpleasant to the taste, as well as the least irritating, is the phosphate of soda; but it is not in general use. If the salts appear to chill the stomach, a few drops of Oxley's essence of ginger should be taken with them.

The drastic purgatives which create an irritating and muscular action in the intestines, such as jalap, scammony, gamboge, and colocynth, should never be used except under the express guidance of a medical man; for, if taken in powerful doses, they are apt to produce fatal inflammation of the lining membrane of the intestinal canal. In dyspeptic complaints they are absolute poison. Castor oil, in a moderate dose, is perhaps one of the safest of those aperients which act upon the whole canal, though it should not be used often. Aloes, which in some form or other generally constitute the basis of the quack *bilious* pills, have a specific effect upon the lower bowels, and are apt to produce piles.

I have enumerated these cathartics, and some of their effects, and those of calomel, in the hope of prevailing upon sea-bathers to avoid them altogether, except when ordered by a physician,—confining their self or family medication to Epsom salts, in such doses and form as I have indicated. I would also earnestly entreat mothers to leave off physicking their children, or supposing them *bilious*. Let these mothers, instead, take care that, though the children eat plenty—for growing children require much nourishment—they do not

overload their stomachs with rich and indigestible food, that they take much exercise in the open air, that they are bathed and rubbed every day, and that they wear warm clothing. Such a system will obviate the necessity for calomel, and castor oil, and senna; biliaryness will quit them for ever, and the freshness of youth will replace the wrinkled pallor of disease.

There is another practice against which I cannot too earnestly caution sea-bathers, who seek relief from dyspepsia and from the affections caused by lithic acid, the principal agent in gout and gravel—I mean excess in the use of the bi-carbonates of soda and potash, to destroy heartburn. Even under medical advice, I have known these salts taken to such excess as to create the most distressing accidents. Whenever those who use these remedies perceive small white concretions in the chamber vessel, let them cease, or the effects may be deplorable. Besides, these salts exercise an action on the nervous system, and produce debilitating effects which every one must have perceived who has used them to any extent. Further, they not only neutralise the acid which creates the disturbance in the stomach, but with it the acid secretions of the stomach itself which are necessary to digestion, and without which the power of elaborating chyme is destroyed. This, as I have observed in another chapter, increases the evil it is intended to check; for after large and repeated doses of these alkaline medicines, heartburn will return with redoubled violence, and the

dyspeptic disturbance be ten times greater than before. For persons of a gouty habit, the bi-carbonate of potash should be taken in preference to that of soda, because with lithic acid it forms a soluble salt. The bi-carbonate of soda, on the contrary, combines with that acid into an insoluble salt, of which the concretions found round the articulations of gouty persons are composed. The dose of either of these salts should not exceed twenty grains, dissolved in half a pint of water with the chill taken off; or if the stomach will not bear this quantity of liquid, as much less as it will bear. It should be taken only once a day. These bi-carbonates should not be given to children, unless made to effervesce with an acid. Magnesia is the best medicine to neutralise acid and destroy heartburn in children, though care must be taken not to give too much; because its effect is only mechanical, and if there be more magnesia than the acid will absorb, it forms in the intestines concrete lumps very difficult to be removed.

Many persons troubled with dyspepsia and various other complaints seek relief in the use of Morison's pills, by the violent action of which a number of individuals have lost their lives. Still Mr. Morison continues to make his pills, and people to buy and take them. In one of the investigations before a coroner's jury in London, on the body of a man who had died from the violent effects of this medicine, it was stated in evidence that the medicine was manipulated with so little care that the ingredients were not mixed, a portion

of the pills containing scarcely any other substance than gamboge. It is not generally known that in this system of medication, of which Mr. Morison, the self-styled Hygeist, boldly claims to be the inventor, he is only an imitator. The original inventor of the system was a French empiric, the late Dr. Le Roy, who, though an empiric, was a regularly educated and graduated physician. After some years of sound and rational practice, he fancied that, in excessive purgation with violent drastics, he had discovered the great panacea. He then began to compound his medicine, for which a receipt is given in his book ; but which is always better when prepared by his son-in-law, a chemist, apothecary, and druggist, at Paris ! It is composed of scammony, jalap, and gamboge, infused in brandy, with or without tartarised antimony—the medicine when containing the latter ingredient being termed “vomi-purgative,” without it “purgative” only ; each sort being marked, on account of its different degrees of strength, Nos. 1 and 2. For a time Dr. Le Roy’s medicine was even more the rage in France than Morison’s pills are with us : the whole population of the country appeared seized with the blindest infatuation. The medicine was taken by all classes, until a great number of fatal accidents brought it into disrepute, and but few persons now venture to use it. I once, by way of experiment, took a tablespoonful of the vomi-purgative No. 1, which was not the full dose indicated of this strongest No. Though very robust, I thought I should have died from its effects :

during thirty hours I was kept in a state of violent purging, with occasional violent vomiting of mucus, and at last very great prostration of strength. The effect suddenly ceased after a violent fit of vomiting; I felt well almost in an instant, though very weak, and completely cured of personally experimenting upon Dr. Le Roy's infusions. The doctor was, however, sincere; he medicated himself and his own family with his medicine, upon the principle of excessive purging being the panacea for every ailment. I know not whether Mr. Morison's sincerity would stand such a test as this. Does he use his own pills? Without caring about the reply to this question, I must state that Mr. Morison the Hygeist picked up the ball where Dr. Le Roy had left it, and claimed it as his own. Though assuredly the medicine is in a better form as an infusion, yet Mr. Morison thought the English gave the preference to pills, and pills he made of the same substances contained in Dr. Le Roy's infusion, omitting only the tartarized antimony, and having no vomi-purgative, but only the vegetable pills, numbered, I believe, 1 and 2. Mr. Morison's book is so similar in substance to that of Dr. Le Roy, that it is probable the latter served as his model. The effects of the pills have been the same as those of the infusion: inflammation and death. It is to be hoped that this explanation will open the eyes of some of the *lovers of Morison's pills*; and that dyspeptic, gouty, and replete sea-bathers, who have brought

a stock with them to the sea-side, will commit them to the flames ere they trust their bodies to the briny wave.

I shall conclude this chapter with a tragical anecdote, showing the advantages of sea-bathing, co-operating with proper treatment, and the danger of using calomel and drastic purges to an unreasonable extent in a strong constitution, and of using them at all in a weak and delicate temperament.

A man in the middle age of life, of a strong and robust frame, had for some years past begun a systematic excess of self-indulgence in eating and in the use of heavy malt liquors and strong-bodied port wine, until he was disgustingly bloated, and his face covered with an unseemly eruption which considerably enlarged and distorted his features. The extent to which this mode of living was carried developed a strong inflammatory habit, and he was frequently very ill from repletion, or, as he termed it, he had "an attack of bile." On such occasions he had recourse to a box of pills supplied by the family apothecary, and labelled "two or three to be taken occasionally." These pills, of monstrous size, were composed of calomel, gamboge, scammony, and rhubarb, in frightful proportions. Each time he felt unwell, two or three, sometimes four, of these pills were swallowed. Whenever this occurred, he kept his bed during several days, living very low. After such confinement, he would leave his room in an improved state of health: for his

strength of constitution having overcome the irritation of the medicine, the alteration in his mode of living during this short period brought his body towards a more healthy condition, whilst the eruption on his face shrank up and looked pale. This transient improvement in his health was only a signal for fresh acts of intemperance, until he was "very bilious" again, and again had recourse to his pills. Thus he went on, until fermentation and its handmaiden heartburn seemed permanently fixed in his stomach, and a constant disturbance in the loins from lithic acid, indicated that gout, and its frequent companion, gravel, were near at hand.

During the whole course of his life he had never paid any attention to his skin, which was in the state I have so often described in the course of this little work. Such a condition aided the workings of his intemperance.

About this time, on my return from abroad after a very long absence, I found him taking bi-carbonate of soda under the advice of his apothecary, sometimes to the extent of half an ounce a day. At my persuasion he left off the soda, and, with his wife, proceeded to Ramsgate, whither I accompanied them for the benefit of the sea air. Here a month of sea-bathing and friction under my direction restored the equilibrium of his temperament, and the red eruption gradually disappeared from his face. His wife, a pretty and interesting woman, of delicate health, from her constitution having been tampered with a

medicating mother, was afflicted with dyspepsia. She likewise derived much benefit from bathing and friction. All *biliousness* disappeared in husband and wife, and they returned to town with the foundation laid of a sound condition of health, provided they would keep their skin in a healthy state, use proper exercise, and avoid excess in diet.

Shortly after their return to the metropolis, I again went abroad. During several months my friend followed my instructions, and preserved his health ; but a round of feasting having begun, the love of turtle and venison, ale and port wine, prevailed, and he soon fell into his old habits, seeking and obtaining relief from his pills.

Meanwhile, his wife, having suffered greatly from a prevailing epidemic, remained in a weak state during a very long convalescence, and for want of care her dyspepsia returned. Her husband told her she was bilious, and persuaded her to try two of his pills. After undergoing much pain from the irritation they caused, she was obliged to send for medical assistance in the middle of the night. She recovered, however, but the lesson was lost : six months after she was again "bilious," and again she took two pills. This time they operated fatally : inflammation and death ensued, and her body, on a post-mortem examination, presented an appearance similar to that exhibited by the bodies of those who have died from taking Morison's pills.

One would naturally suppose, that after this

tragical event the bereaved husband would have lost confidence in his remedy. Not so : he continued to gormandize to repletion, and then take his pills to work off the effects of his excesses, until, about eighteen months after the death of his wife, a more than usually large dose of his medicine removed him to another and, I trust, a better world.

CHAPTER VI.

BATHING FOR AMUSEMENT. THE EXERCISE OF SWIMMING.

NUMBERS of individuals of sound health frequent watering-places and bathe in the sea, for recreation, luxury, and amusement; also for the preservation of health, and to obtain exercise by swimming. As many popular mistakes exist with reference to the amusement of sea-bathing, and particularly to the benefit which swimming is said to impart to the muscular part of the system, I think it right to offer a few observations on the subject.

The advantage obtained from cold bathing by persons in health, as well as by invalids, is a shock on the system produced by the action of the cold water, which drives the blood from the skin, and by the reaction, brings it back again immediately to the surface, by which means the body glows with warmth so long as this reaction takes place. No longer than this is the cold bath beneficial: the moment the reaction ce-

because the system has no longer strength to produce it. If, therefore, in cold bathing, a glow at first occurs and goes off, and a chilliness succeeds the bath, it is a proof that the bather has remained too long in the water. The temperature of cold water in this country, even in the hottest weather, is much below that of the body; consequently a portion of caloric is constantly escaping from the latter into the water. If, therefore, immersion were greatly prolonged, it would occasion death. For, although animal heat is constantly being formed by respiration, the mass of cold water withdraws it with greater rapidity than the system can produce it. The debility which ensues gradually impedes the whole functions of the body, and renders breathing progressively weaker. The supply of animal heat now gradually diminishes until the muscular action ceases altogether, and life is extinct, even though suffocation by drowning should not close the tragedy. In numerous instances, where resuscitation of a person drowned has been attempted, the failure has been wholly owing to a total deprivation of animal heat caused by long immersion. Could warmth be communicated to the blood, and the usual means employed to make the lungs resume their action, animation would soon cease to be suspended, and the lungs would speedily generate a sufficient quantity of warmth to flow through the body, and revivify all its members.

What I have stated leads to this conclusion: from the moment the blood ceases to come to

the surface, and the skin feels cold, there is danger in remaining in the water, and mischief has already been done by too long an immersion. The best and most healthy cold baths are those which do not exceed five minutes, and the skin, after leaving the water, feels warm, and has a tendency to redness, a red colour being instantaneously developed on the application of the dry towel. In some individuals of very fair complexion and thin cuticle, the skin becomes immediately red by the reflux of blood, and may therefore serve to indicate, without the aid of sensation, whether further immersion may be indulged in or not.

Ladies fond of sea-bathing as a luxury, and a pleasant bracer of the whole animal economy, should never exceed a couple of good dips. Rubbing the whole surface of the skin during several minutes, should immediately succeed in the bathing machine, and be followed by a brisk walk home. Ladies always fear to wet their hair, from the difficulty of drying it. But I think that if they bathed without the oilskin cap, and the water were allowed to wet the head twice a week, the action of the salt water would prove very beneficial, and prevent the hair from falling off. After the bath, the hair should be wrung and wiped as dry as possible with towels. On the fair bather's return home, she should have her head and hair rubbed with a couple of yolks of egg beaten up with a spoonful of lemon juice, and immediately after well washed with abundance

of either cold or lukewarm soft water, until the head and hair are quite clean. The hair should again be wrung and wiped with towels, until as much of the moisture as possible is absorbed, when it may be dried by the following process, which occupies but a few instants. The body reclines upon a sofa or ottoman, over one extremity of which the wet hair hangs loose. Under the hair is placed either a fire-shovel, or a pan, or a chafing-dish, with two or three bits of lighted charcoal. A pinch of powdered benzoin is thrown upon the ignited charcoal, when a thick smoke arises, to receive which equally, the hair is spread open by the attendant maid. In a few seconds the hair becomes quite dry, and is impregnated besides with an agreeable perfume. This is the mode employed, in our Indian settlements, to dry their hair, by the Anglo-Indian ladies, upon whose naked heads the water from the shower-bath is allowed to fall every morning. The drying is complete in an incredibly short space of time, it being effected not only by the temperature of the smoke but by the action of the fumes of benzoic acid, which go through the hair. This acid absorbs the water. I may add that this smoke never excites coughing, because the back of the head only being presented to it over the sofa, not sufficient reaches the lungs to produce that effect. I believe this smoke to be an excellent strengthener and preserver of the hair.

The bathing-machines at present in use are clumsy constructions, affording few of the neces-

sary accommodations, which should always attend a delicate female at the bath. Because the bather is about to be or has been immersed in the sea, it does not follow that the bathing-machine which conveyed him or her thither should be wet, comfortless, and cold, and totally unprovided with those conveniences that serve to keep up the action the bathing has produced, which action may cease before the bather has dressed, and the machine itself regained the beach.

The interior of a bathing-machine ought to be fitted up with as much care, and contain as many conveniences, as the bathing-rooms at the public baths in London. The floor should be carpeted, and a small closet divided off from the landing-place to which the ladder is affixed, communicating with the little room by a door covered with green baize, and lighted by a small lateral window. The lady who bathes having ascended from the water to the landing-place, should enter the closet, be immediately divested of her bathing-dress and cap, put her feet into a pair of dry lamb's-wool slippers, and be wholly enveloped in a thick cotton dressing-gown, very dry, which she should bring with her. She should now enter the carpeted room, and seat herself upon an easy-chair or sofa, which should be there, with a footstool. Her legs and feet should be first rubbed till they are in a glow; then her neck, back, and arms, and successively her whole body, returning several times to each part when the whole is dry, and terminating either with a flesh-brush or with a roll of flannel.

formed for the purpose. Dressing should now be as speedily effected as possible. It would be very desirable if ladies who wear stays would leave them off when they go to bathe, and throw a large shawl over their shoulders, if they are anxious that the absence of these figure-spoilers should not be perceived. Taking off stays to bathe, or putting them on immediately after the bath, is by no means an advantage.

With reference to bathing-machines, as to every other object of necessity at watering-places, many of which a genial situation, or a whim of fashion, has but lately caused to emerge from their primary condition of fishing hamlets, to become places of importance and periodical migration,—the inhabitants of these marine localities of health and recreation have not the least notion of the wants or comforts of refined life. Their sole object is to obtain as much money as they can from those who come to dwell with them but for a short period; and this they always keep in view, screwing every shilling they can from their visitors, in return for the smallest possible quantity of accommodation. They care not about affording satisfaction or comfort; money is their sole aim. They know that if no better accommodation is to be found, sea-bathers must either put up with what exists, or go without, which latter alternative could not surely be adopted. If any spirited persons in these sea-bathing towns would construct and fit up bathing-machines, such as I have described, no bather would *object to pay for the additional accommodation.*

The best hour of bathing, for the robust and strong, is in the morning just after rising; for the feeble and delicate, about two hours and half, or three hours, after an early breakfast,—their stamina not being sufficient to produce cutaneous reaction without the aid of nourishment previously taken, and in the absence of such reaction the bath is injurious. I have often known serious disturbance produced in persons of delicate frame by bathing before breakfast, whilst the bath after the meal was very beneficial. This applies to both sexes. Care must be taken, however, not to go into a bath hot or cold, immediately after taking food, nor until the stomach has had sufficient time to elaborate the aliment it has received; because such bathing would disturb the digestion. The cause of this is obvious. When the stomach has received food, the circulation becomes more active, and the blood rushes to that organ to afford it the necessary means of carrying on digestion. Every vessel in the stomach is therefore distended with blood, and the whole machinery, even to its most minute parts, in active operation in the manufacture of chyme, chyle, and blood. Sudden change of temperature, such as immersion in either hot or cold water, disturbs the whole; the blood leaves the stomach and rushes to the skin, and the commenced elaboration is suddenly stopped. On the return of the blood, the operation is resumed with difficulty, and derangement of the stomach, sickness, and indigestion, are the consequences of the disturbance. I once knew a young man, an

excellent swimmer, who went immediately after dinner to enjoy his favourite exercise. His digestion was stopped; the food rose to his throat whilst he was beyond his depth, and he was suffocated ere assistance could arrive. Taking a foot-bath, hot or cold, immediately after a meal, or sponging the body with cold water, or even using the flesh-brush violently, or taking violent exercise, disturbs digestion from the same cause. This applies likewise to the enema, which should never be used after, but before, taking food.

Any one may take food after immersion in a warm or even a cold bath, and whilst still immersed in the water; for although the temperature of the warm water has brought the blood to the skin, it goes to the stomach, when that organ is excited by receiving food, and the skin remains exposed to the same heat. Nothing in this case exists to draw it away and suspend the due motion of the machinery which it has set in action.

There is a further reason why sea-bathing, used as a luxury or a preserver of health, is more beneficial to weak and delicate individuals at a later than an earlier hour in the morning. Besides the deficiency of stamina, arising from want of matutinal nutriment, the water is so cold at an early hour in the morning, that even if the requisite quantity of nourishment had been taken to bring the power of the body to its greatest height, *still* there would, in many cases, not be found sufficient power to produce reaction against the

action of the fluid when at so low a temperature. About ten or eleven o'clock this temperature is greatly raised by the sun, and the power of reacting against the action of the cold water brought within the compass of the bather's limited strength.

Persons who have a tendency to gout, however robust and healthy they may otherwise be, should especially avoid long immersion in the water; because the cold, as soon as the reaction is past, is very apt to develop a lithic acid disturbance, causing lumbago, or intense uneasiness in the loins, with a pain extending down one or both thighs. This is more likely to occur when an easterly or a north-easterly wind prevails; it seldom takes place, however, in the height of summer, unless the season is particularly inauspicious, and the atmospheric temperature unusually low. March and November are the months when this is to be dreaded in podagrical sea-bathers, who, though not actually afflicted with the disease, carry the germs of it in their system until removed by exercise, temperance, bathing, skin-rubbing, and warm clothing. Whenever such pains in the back and loins are brought on, the cold sea-bath should be suspended for a time, and the warm sea-water bath at 100° Fahrenheit be resorted to daily, and succeeded by plenty of skin-rubbing, until the pain has ceased. The patient may continue an hour in this latter bath, keeping up the temperature to induce perspiration. About an hour after, exercise should be taken in the open

air. For this disorder, the vapour-bath may be employed with equally good, perhaps better, effect; but then the body must be sponged every morning with warm sea-water, and well rubbed afterwards with towels and the flesh-brush.

Though any hour of the day which will not interfere with the digestion may be selected for sea-bathing in the open air, still this bath should never be taken after muscular exertion or intellectual labour. Nothing is more injurious than a cold bath after bodily or mental fatigue; and if no worse evil ensue, a violent cold is sure to be the consequence. Weariness from either bodily or mental labour relaxes the skin so much, and destroys so much of its vascular vigour, that it has no power to react; therefore a cold bath should never be taken except after repose, and before any labour is begun. The warm bath, on the contrary, relieves exhaustion from fatigue, restores the tone of the skin, and gives it sufficient power, unless the fatigue has been very great and accompanied with a want of sleep, to react, on immersion in cold water; though, on all occasions, it would be more prudent to defer cold or sea-bathing till the next day.

If the stomach be really disordered by bile, which is certainly not always the case when people call themselves "biliary," the bathing should be suspended for a day or two until this cause of indisposition is removed, which it may be in most cases, without the use of calomel or drastics, provided the skin is attended to and properly

sponged with warm salt and water or sea-water, and well rubbed afterwards. A gentle dose of salts, and a close dietary regimen, will generally restore health in a couple of days; or if a mercurial medicine *must* be used, five grains of blue pill at night and the salts next morning, omitting during the operation of the medicine the sponging, but continuing the friction. Let me here state, once for all, that there is great liability to catch cold after a strong dose of medicine, and especially after calomel, from the very circumstance that strong aperient medicines relax the skin and destroy its powers of reaction—therefore are *calomelising* and *drasticising* incompatible with cold-bathing, whether in the sea or in fresh water. Against their effects the saline stimulus of sea-water has no power, because it is insufficient; therefore the lover of sea-bathing must eschew calomel and Morison's pills.

Persons in good health, and especially females, should not bathe in the open sea oftener than every second day. On the intermediate mornings, the skin of the whole body should be sponged with either cold or tepid water containing a little vinegar, or, what is still better, a little of the liquid termed "the solution of the disinfecting chloride of soda."* A tablespoonful is sufficient for three pints of water. After the sponging, the body should be rubbed dry with coarse towels, and friction with the flesh-brush employed upon it

* This is to be purchased at any chemist's, at the rate of half-a-crown for a quart bottle.

during from five to ten minutes. I have often found, for delicate females, a large ball of flannel preferable to a flesh-brush, as producing more agreeable and less irritating excitement of the vascular system of the skin.

As neither the cold bath, nor a daily sponging with cold or tepid water attended with friction, proves sufficient to prevent an accumulation of epidermal scales, a warm bath of sea-water or of salt and water should be used once a week. The best hour is previously to dressing for dinner. The temperature of this bath should not exceed ten degrees above the heat of the body, which heat may be ascertained by holding the bulb of a small thermometer under the tongue during a few minutes. In this water, kept up to its first temperature or not, though it should not be allowed to fall so low as that of the body, the bather should remain from half an hour to an hour. The epidermal rolls will then be found to come off by friction with the towel, which should not be spared. Once a month a warm bath of fresh water should be taken, and the body well soaped, or rubbed with almond paste. Every morning the feet should be washed, like the face and hands, with soap or almond paste. When not in the vicinity of the sea, a shower-bath of water and salt will be found an excellent substitute for sea-bathing, and should be constantly used in the same manner. The *weekly* warm-bath and the monthly soaping should *neither* of them be neglected. In the warm-bath *without soap* dissolve two or three pounds of salt.

When the shower-bath does not agree, the warm-bath may be used more frequently.

As a very important point to sea-bathers and frequenters of marine watering-places, I would advise them to agree with their laundresses, and to be very strict in enforcing such agreement, that none of their linen shall be dried upon the beach or near the sea. When thus dried, it becomes impregnated with minute particles of salt, and the moment there is the least moisture in the atmosphere, these particles dissolve and the linen becomes damp. All the airing in the world will not obviate this; because the airing only evaporates the moisture, but the salt remains, and can be removed by no other process than by washing the linen over again and drying it in a place where it cannot imbibe any salt.

I shall now consider whether the swimming, in which so many persons delight, is beneficial or not as an exercise; offering at the same time some hints for the advantage of those to whom it yields pleasure and excitement, and whose sole attraction to the watering-place is often the enjoyment it affords.

Swimming requires a considerable expenditure of muscular power, which must be increased in proportion as the specific gravity of the fluid diminishes, and the column of fluid approaches nearer to the weight of the floating body. Thus fresh water being specifically lighter than salt, the body sinks deeper into it, and is propelled

with greater difficulty through the fluid, in consequence of the less density of the medium of resistance; stagnant water, from its inertness, giving much more trouble to the swimmer, who is assisted and rendered more buoyant by the motion and impetus of running water. The water of the sea is therefore the best for swimming. The deeper the water and the hotter the climate, the greater is the buoyancy of the swimmer, and the less his exertion—the depth rendering heavier the column of water covered by the surface of his body, and the water of the sea being in warm latitudes more strongly impregnated with salt, and consequently heavier.

But in the heaviest water, swimming causes a greater amount of muscular exhaustion than an equal muscular action exercised upon a solid out of the water. The consequence is, that fatigue from swimming is more rapid and greater than from any other violent action of the muscles. To this must be added the continual loss of animal heat in the water, after the power of reaction in the skin has been overcome. Thus, the most athletic men, after swimming an hour, become almost exhausted. Very few can bear, in this climate, an hour's continuous swimming, however boldly they may breast the waves at the outset. The moment chilliness begins to be felt, there is danger in continuing the exercise. Though myself a practical swimmer, and able to endure as much muscular exertion as most men, **I have always found myself more exhausted, and**

more in danger of severe illness after over exercise of this description, than from the severest muscular toil in the open air. Had Captain Barclay, of Ury, undertaken to swim twenty thousand yards in a thousand hours, at the rate of twenty yards each hour, instead of walking a thousand miles in that time, he would have died long ere the term was complete, from mere loss of animal heat, to say nothing of the muscular exertion. The loss of heat from the human body, when it reaches a certain point, is irreparable: no outward applications can restore it to the system. As it is formed but slowly, though its formation never ceases whilst respiration exists, a certain amount is requisite to keep the human machinery going; and if heat be abstracted much beyond that point, the lungs have no longer but a faint play, and very often, in spite of restoratives, the system will not rally. For let it be understood, that action and reaction do not create heat of body: they only carry it from one part to another, by removing the blood which is its vehicle, thereby rendering the body healthy, and facilitating the formation of animal heat. When the blood has lost its warmth, it becomes stagnant, and the once active red fluid ceases any longer to flow. No restoratives, no artificial warmth can alter this condition, unless the lungs can again be brought into play to restore, not vitality as it is usually understood, but heat as well as oxygen, to the blood,—a thing very difficult to achieve. This accounts for persons dying after

they have been saved from the water alive,—long immersion having subtracted so large a portion of animal heat, that no internal remedies, nor mechanical external applications, could induce a rallying or reaction of the system; the power of the lungs being inadequate to restore, in the necessary time, a sufficient supply of warmth to the blood for the functions of life.

Taking all these circumstances into consideration, I should say that swimming causes too much exhaustion, and opens the road to too many dangerous consequences, for people to adopt it as a healthy or health-bearing exercise. It is a passion, a sport, an amusement; and as such may be classed with other exhausting or dangerous sports, such as a steeple-chase, or a foot-race, or a walking-match against time, or a tiger hunt, or that fatal exercise of rowing and boat-racing practised at Cambridge, which has destroyed many a promising youth, and unexpectedly brought bereavement and mourning upon a parent rendered childless, or upon an orphan sister now without a protector. Swimming, then, should not be indulged in to excess; and even for a robust person, half an hour's exertion of this nature will be found sufficient. About a couple of hours after the cessation of the exercise, and before taking food, a warm bath would be found very beneficial. If there is exhaustion after swimming, friction and warmth should be applied immediately, and the principle worked out of those means for restoring suspended animation so successfully adopted by

the Humane Society in London, and published by them. Exhaustion from immersion in water, whether swimming be used or not, is the first step towards suspended animation, which is sometimes caused without any drowning at all, merely by abstraction of caloric from the body.

On the Continent, it is very much the fashion to have schools of natation for ladies, who swim and sport in the limpid water like so many naiads or fountain nymphs; taking care, however, that their exercise last not too long, and that their sports are not broken in upon by any modern Actæon. In some of these schools, ladies of the highest rank and beauty are wont to meet and swim together, forming an assemblage of grace and elegance shut out from the gaze of man, and to which his imagination alone, a power that sees through stone walls, can have access. The late lamented Madame Malibran was very fond of this amusement, and once asked me if I could find her, in London, a school of natation for ladies. No such thing exists in our smoky metropolis; nor do I think that English ladies in general will ever take to the amusement of swimming, which, however, might prove useful on any emergency. As an exercise of health to the body, it could never be adopted from the reasons I have already assigned, however elegant the attitudes to which it might lead, and however great the freedom of action in the limbs which it might induce.

The main points for a swimmer to attend to are the following:—He should first obtain a free and

open strand, with a gravelly bed and clear water. Let him beware of piers and headlands, around which the tide is very apt to play dangerous pranks, the more embarrassing to the swimmer as they are the least expected. He should never enter the water while the tide is ebbing, because if he should swim out too far, he might be unable to return, or he might at once be dragged away by the current and removed too far from human assistance to be saved. I know a young man who was drowned last year at Ramsgate from this very cause, and his body picked up at Pegwell Bay. Going out in a boat alone, or with persons who do not understand its management, and then jumping overboard for a swim, is very dangerous; it is the cause of frequent accidents in the Thames, between London and Vauxhall bridges. In the open sea it is still more hazardous, because the swimmer is further removed from assistance, while he is hurried away by the current. The best mode of enjoying a swim is to start from a bathing-machine when the tide is running in. If the swimmer strikes out against the current and swims as far as he can reach in ten minutes or a quarter of an hour, he can at any time turn and regain his machine, towards which the tide will carry him with very little exertion of his own. After he has been well rubbed and is dressed, he should take no further exercise, but return home, loll upon a sofa, and read for an hour and half, then *go into* a warm bath, undergo plenty of friction, *dress for dinner*, and close the day with any

amusement open to him. This exercise of swimming should not be repeated more than twice a week, if the swimmer would preserve his health and strength unimpaired.

Another effect of long exposure to cold water and to the loss of animal heat, is cramp, to which swimmers are particularly subject. It is much dreaded by them, because when it occurs in the muscles of the abdomen and chest, and they are beyond their depth, and not within call of immediate assistance, they are inevitably drowned. Cramp is much less frequent among swimmers in the sea than among those who "sport in lakes and rivers;" because, in the latter, it is very often caused in an instant by the swimmer passing over a cold spring, considerably lower in temperature than the main body of water. Accidents from cramp are of very common occurrence in the Serpentine in Hyde Park. To preserve himself as much as possible from cramp, the sea-bather should never take the exercise of swimming, after having used muscular exertion. Before he jumps into the water, he should give his limbs and body a little friction or towel rubbing, just to excite the vascular action of the skin. He should likewise take especial care not to swim on the day following any excess in either food or wine; for at such times the body has a predisposition for cramp, which the least chill may bring on. Besides, the reaction on the system, after the excitement from vinous or spirituous liquors, lowers the body,

relaxes the skin, and gives to the body a particular tendency to catch cold.

I have often known swimming recommended, even by medical men, to young persons for expanding the chest, and obviating a predisposition to pulmonary consumption. How soon such exercise would develop the disease, instead of keeping it off, I leave it to those to say who are acquainted with the effects of long immersion in cold water. The exercise of swimming cannot be used by sea-bathers who take but a dip in the water, and out again; and it is practised with safety by such robust individuals only as can, without much inconvenience, part with a portion of their warmth, which is certainly not the case with individuals predisposed to pulmonary consumption. To indulge the propensity for swimming in a satisfactory manner, three things are requisite: perfect and robust health, muscularity of frame, and breadth of surface, or *stoutness* of body, especially breadth of chest,—requisites certainly not to be found in the predisposed to pulmonary consumption.

Youthful bathers of the male sex generally acquire a habit of throwing themselves into the water head-foremost, in order, they say, to prevent, by wetting the head first, a rush of blood to the brain, or in more common parlance, a determination of blood to the head. I have frequently been consulted on the propriety of this practice. My opinion is condemnatory of it; for I appre-

hend it produces sometimes the very effect it is intended to avert. Reversing the body so that the feet shall be in the air and the head downward, is sure to cause a rush of blood to the brain, whether the body be immersed or not. I can, from my own experience, illustrate the opinion I have given. When a boy, I was very plethoric and subject to determination of blood to the head. Whenever I threw myself head foremost into the water, I was sure to have immediate headache, and soon after I had taken my swim, sometimes before it was over, copious bleeding at the nose. I therefore discontinued the practice, and jumped in feet foremost. After this change, my headache and bleedings from the nose were never brought on by bathing. When I walked into the water, I always wetted my head first, a practice I continue to this day, though I do not consider it necessary. Let those who fear determination of blood to the head adopt this practice : it will lull the apprehension of danger ; and even where no danger really exists, to remove all fear of it is a great blessing to nervous persons.

All the best swimmers and divers I ever saw, jump into the water feet-foremost, and total immersion is so rapid that the blood has no time to wander to the head. This is certainly the mode of entering the element which I should recommend sea-bathers to adopt from their bathing-machines ; or if the water is too shallow, or they are too timid for a jump, let them wet their head by

taking up water in their hands, and then, if they are nervous, walk quietly down the ladder.

I know of two accidents which occurred from the practice of head-foremost diving, one of which was fatal. I was both a spectator and actor in the other.—I had gone with a schoolfellow to bathe in a fish-pond. The water lay tranquil and treacherous on a muddy bed, and was itself rather turbid. My friend being ready first, threw himself, as was his custom, head foremost into the rather opaque element. To my surprise he did not come up immediately, and I fancied that I perceived something strange moving under the surface of the water, which here was only just out of my depth. I immediately jumped into the creamy fluid, and found that my friend had thrown himself in with such impetus that his head had entered the mud at the bottom of the pond, from which situation he was unable to liberate himself. It was his feet which I had seen moving under the surface of the water. With considerable difficulty, I extricated him from his perilous situation, and with the help of a labourer, who accidentally passed, brought him to the shore. He was in a state of suffocation, the mud having encased his head up to the chin. After freeing him a little from the dirt, so that he might breathe freely, we conveyed him to a clear rippling brook close by, and with the aid of its sweet water and *a little bit of soap*, which I had brought with me *for the benefit of my skin*, we restored him to his *human form*. From that time he ceased to throw

himself head-foremost into the water; and before he would even jump in with his feet downward, he always sounded the bottom with a miniature deep sea-lead, being a plummet with a hollow at the extremity, which informed him of the nature of the soil below,—the lead being attached to a dozen feet of string.

The other accident occurred at Bencoolen, to a man whom I well knew. He was fond of swimming in the harbour, in defiance of sharks. On this occasion, he threw himself head foremost into the water, with a strong impetus, and his head encountered a sunken rock six or eight feet below the surface, with such violence that he died instantly.

CHAPTER VII.

BATHING OF INVALIDS.

SEA-BATHING, as a remedy for specific disease, as well as a protection against the dangers of weak and unsettled health, requires to be conducted with much more care than that intended only for luxury, or the preservation of an already robust condition of body. It is to be attended with precautions of every kind, applied to air, diet, exercise, the nature of the disease, the age, habits, and idiosyncrasies of the patient, and to a variety of minor objects, all of which tend to promote or retard the benefit expected from immersion in the cold salt fluid. Colds, cramps, bowel complaints, and even fainting fits, sometimes follow trifling acts of neglect which would produce not the slightest disturbance in persons free from disease. And yet in watering-places generally, all bathers are put upon the same footing by the ignorant individuals who earn their subsistence *as attendants* upon them. The coarse brutality of the bathing-women, in dipping the bathers,

is sometimes productive of considerable evil; and where nervous timidity has existed in a bather, this sort of conduct has sometimes raised an alarm in the patient fraught with a thousand times more mischief than the amount of benefit yielded by the bath itself, unattended with such a circumstance. During my experience, I have known many a poor girl and boy, weak, sickly, nervous—starting at a sound or a shadow—when seated trembling on the steps of the bathing-machine, afraid either to advance or recede, suddenly and unexpectedly pulled down head foremost by the brutal female attendant, and soused in the water with just as much unconcern and absence of tenderness, as if she were dipping a whelp. I have frequently seen a fit of illness the consequence, and the impossibility of ever inducing the frightened child to try a second bath without employing force, and thereby creating an injury much greater than the one sought to be removed by the bathing.

The women who attend upon ordinary female bathers in the machines, should be persons of kind, soothing, and persuasive manners. That there is no lack of such persons, is proved by the nurses in every hospital throughout the country. These are obtained so qualified, because, the office of nurse being elective in establishments supported by voluntary contribution, such qualifications are looked for, and those candidates who have them not, are rejected. If, then, ordinary bathers, in good health, require in their bathing attendant

qualities I have mentioned, what must be the case with invalid bathers, to whom the least oversight is a vehicle of mischief, the least roughness a cause of pain and alarm, and to whom a word or a look skilfully applied often brings relief! For such persons, the bathing-women should possess all the qualities of the best hospital nurses: blandness, kindness of manner, gentleness, persuasiveness, a knowledge of the mischief that may result from mismanagement, either before, pending, or after the bath, and, above all, a great deal of tact, or, in plainer words, of "mother wit." As the earnings of the bathing-women are by no means inconsiderable, females possessing such qualifications should, by a proper encouragement held out by proprietors of bathing-machines, be induced to embrace this calling, instead of leaving it to be exercised only by ignorant, often by dram-drinking fisherwomen. A woman known to the bathers as being thus gifted would obtain such preference, that she would soon realise an humble fortune.

With reference to bathing-machines I must observe, that if those in general use are so ill adapted to the comforts, not to say the necessities, of bathers not afflicted with disease, they are worse adapted still to the wants of the sick. Immersion in the sea would often afford relief to an invalid, when considerable mischief might occur after the bath from the bad construction, *want of conveniences*, and the cold and wetness of the bathing-machine. If, therefore, the good

effect of the bath is to be immediately counteracted by what must inevitably follow in a common bathing-machine, the patient had better totally refrain from sea-bathing. Thus, the benefit of immersion in the open air is lost in a great many cases where it might be successfully employed.

The interior of a bathing-machine for invalids should be as carefully fitted up as a lady's boudoir. Besides a carpet and matting, and requisites for the toilet, there should be a small sofa, upon which, after leaving the bathing-dress in the closet mentioned in the last chapter, the invalid bather could recline while under the operation of friction. There should be a window for the free admission of air, and a ventilator in the roof. In very hot weather the door of the closet might be thrown open, when, immediately after the friction, the body has received its first clothing. Though there should be a constant circulation of air in this little room, the patient would run no risk of catching cold; but the reverse is the case where an invalid is obliged after bathing to *stand* in the little room of the machine, upon a dirty, wet floor, open in several places, where the process of wiping and rubbing cannot be carried on so rapidly as it ought, whilst the evaporation from the still wet skin, especially the wet feet, produces a degree of cold which ought to be avoided. Besides this, the bather's clothes, especially the stockings, frequently become wet, because there is no convenience to keep them dry; and wet or dry, they

must be put on as they happen to be. A sofa is indispensable to a weak invalid bather, in whom the exertion of standing prior to the bath might produce fatigue, and consequently enfeeble cutaneous reaction, and to whom also a recumbent posture and other mechanical comforts might be necessary after the bath. No such condition exists in any of the bathing-machines I have ever seen; and from this cause alone, sea-bathing is frequently neglected as one among the means of combating disease, in cases where it might prove of incalculable advantage.

Numerous invalids, and especially females, are frequently deterred from following up the necessary course of sea-bathing, from the mere discomfort attendant upon the use of these clumsy and inefficient machines; by which they perhaps lose the greatest benefit which they expected to derive from a visit to a marine watering-place. I am quite convinced that if machines were constructed with adequate accommodation for invalids, the number of sea-bathers would very materially increase.

As I have before observed, in ordering immersion in the sea for the cure of disease, the nature of the malady, the age, the sex, the strength of the patient, and the nature of the climate at the bathing-place, should be taken into consideration. A difference in any of these points may influence the selection of any particular watering-place; *for bathing which may do mischief at one watering-place may prove beneficial at another, just upon*

the same principle that the temperature of the water at any particular hour of the day is preferable to that of any other hour. These matters are very little thought of by the ordinary family medical attendant when he utters his fiat in favour of sea-bathing. Of course, as the doctor has mentioned no particular place, the nearest at hand and the most convenient for the ordinary pursuits of the bathers is preferred, whether suited or not to produce the best effect.

There is another point to which I would call attention. When sea-bathing, unaccompanied with further instructions, is ordered by the medical man for a weak and delicate, often a deformed and sickly child or young person, the mother, or any person intrusted with the care of the bather, invariably fancies that exposure to cold bleak winds and fatiguing exercise will co-operate with bathing in the cold sea every day an hour after daylight, and impart extraordinary strength and hardiness to the patient. Instead of this, it engenders mortal disease. How many instances have I known of a poor, sickly, narrow-chested girl, delicate as a hot-house plant, from over care and super-medication during a precarious childhood, and though arrived at the age of puberty, appearing scarcely emerged from infancy :—how many instances have I known of such a girl being hurried to Ramsgate, or Margate, or Brighton, forced every morning from her warm bed at daylight in the dreary month of November, taken to the beach shivering with cold, put into a bathing

machine, plunged into the sea, and then conveyed home still shivering and uneasy ! At breakfast she has been scolded for her want of appetite, her appearance of languor, and her anxiety to sit close to the fire. After breakfast she has been hurried out and made to walk on the bleak downs in a cold and cutting easterly or north-easterly wind, until her limbs were cramped from fatigue and cold. And this practice would be persevered in until her weakened frame gave way, the props of life fell down, and she sank into an early grave. Had she been taken to a milder part of the coast, to South Devon for instance, and from two to three hours after breakfast every other day dipped in the sea at a place sheltered from these winds, and made to use in the open air exercise that did not reach fatigue, her life might have been saved and her health restored.

One dear girl, who thus fell a victim to mistaken treatment, I well knew. She was fifteen years old, narrow-chested, with a decided predisposition to pulmonary consumption, and with curvature of the spine, a condition of body no doubt brought on by her having been encased in stays *ever since she was five years old*, in order that she might be trained up to a good shape. This injudicious pressure of her body was attended with a most exaggerated system of physic-taking pursued during nearly the same period. I loved this child, though not related to her, because she was affectionate and gentle; because her intellectual endowments were of a first-rate order; because she

was so helpless and so sickly, and so generally interesting ; and because she was as timid as a hare, trembling at the shadow of a leaf. My affection for her was as strong as if I had been her father —perhaps it was increased by the circumstance of her being an orphan. She now stands before me in the eye of memory, just as she took leave of me previously to an absence of some years from England. Her large dark eyes, always beaming with soul, were now full of tears, her beautiful though sickly features were paler than usual, and an expression of anxiety and suffering gave a peculiar character to her mouth. "I shall never see you more," said she, throwing her arms round my neck and sobbing ; "and yet I ought, for you are the only human being who loves the poor deformed Eliza."

Her prediction was too soon verified. She was ordered to try to obtain strength from sea-bathing, and in the month of October was taken to the coast,—whither I shall not indicate. The day after her arrival she most reluctantly consented to bathe a little after daybreak. It was with great dread that she entered the water, and the bathing-woman who then attended her was gentle and considerate. She felt very cold and uneasy after the bath, and was unable to leave her bed the whole of the ensuing day. It was an entire week before she could be persuaded to bathe again, which she at last consented to do, although she said the bath would kill her. The morning was very cold, and she sat shivering at the top of

the bathing-ladder, unable to summon resolution for the plunge. She was attended on this occasion by a different bathing-woman. This creature, impatient of the delay, at length ascended the ladder, and standing on the landing-place of the bathing-machine, suddenly seized the poor child round the middle, held her head downward and her feet in the air, and jumped with her into the sea. Eliza's weak nerves sunk under the fright, and a violent convulsion ensued. The woman, alarmed, conveyed her to the shore: she was taken home, put into a warm bed, and a physician sent for. In spite of the most judicious treatment, convulsion succeeded convulsion for two days; on the third she sank into a state of torpor; on the fourth she recovered her recollection, but was so weak that she had great trouble to articulate; on the fifth day after this ill-advised bathing, Eliza's pure spirit winged its flight to heaven.

I have entered into these to me distressing particulars, in the hope that they may prove useful in impressing upon the minds of parents what I have repeated over and over again, and still repeat, that the benefit which may accrue from sea-bathing to delicate young persons and sickly children, depends much upon the mode of using it. The main object is, that when taken, there shall be, in the bather, sufficient strength of body to enable the skin to react; and that when no such reaction can be obtained, the cold bath is injurious, and should be discontinued. If there-

fore, after the bath, there is, instead of a sensation of pleasure, one of chilliness, oppression and languor, the immersion has proved hurtful. A use of the warm-bath alone, accompanied with friction, will generally remove this weakness, and impart a strengthening power sufficient to permit the resumption of the cold bath.

I would have mothers bathe with their delicate and nervous daughters, fathers with their delicate and nervous boys, using persuasion, but no compulsory force, to induce them to enter the water, to which they will soon become attached, if it agrees with them; for the dread of it will wear away in a few days, if the immersion is succeeded by a comfortable and pleasurable feeling.

In bathing for cutaneous affections, if the skin is tender, it should be rubbed only with towels, which should, each time, be clean from the wash. If the skin is sufficiently free from irritation to allow of the use of the flesh-brush, this latter should, after each rubbing, which must occur only once a day, be well washed in a wineglassful of the solution of the disinfecting chloride of lime to a pint of cold water, after which, it should be well rinsed in cold water. Should flannel be substituted for the flesh-brush, it should be used once only, and then washed in water, containing some soda and lime-water.

To nervous diseases, as well as to consumption and accidental scrofula, sea-bathing has been applied with great success, after first strengthening the system with the use of the warm-bath of sea-water.

taken ten degrees above the heat of the body, being of course always followed with friction. But in pulmonary, as well as in nervous diseases, other concurring causes of relief must be brought to the aid of the bath. One of the principal of these is exercise, or a proper action of the muscles. In pulmonary affection especially, the exercise should be judiciously regulated according to the strength, so as not to bring on fatigue. In predisposition, exercise should be applied to the lungs. Most parents, when they perceive any pulmonary weakness in their children, increase the tendency to disease by preventing a proper exercise of the lungs. How often have I heard a mother say, "I have ordered that my girl shall not learn to sing, although she has a good voice, because she appears weak in the chest, and I am afraid it will do her injury!" Weakness in the chest is the very reason why she ought to sing. There has never yet been an instance of a public singer dying of pulmonary consumption, or of any one of those persons so dying, whose pursuits strongly exercise the voice, especially such as daily cry, from their childhood upwards, goods for sale in the streets of London. Whenever there is a predisposition to pulmonary affection, singing should be resorted to and exercised daily, until gradually its practice is brought to occupy several hours, divided into intervals; each singing interval not exceeding half an hour, and each interval of rest being at least an hour. *Reading loud should likewise be constantly practised, as well as reciting, speaking and calling in*

the open air; and as the chest expands from this new and beneficial action of its muscles, the voice should be exercised, like that of Demosthenes, against the roaring billows. This exercise, however, must be judiciously regulated, and never made to continue, at one interval, during more than ten minutes at a time. Let it be understood, that this exercise must be increased very gradually and with great judgment, the first attempts not exceeding half a minute in duration.

When pulmonary disease has actually commenced, such a discipline of exercise must not be undertaken, except under the express directions of a medical man, who will regulate the amount of exercise according to the state of the lungs; otherwise, the excitement of the muscles might increase the irritation of the disease. The moment its exacerbation is subdued, then the course of exercise may be attempted in the most gradual manner.

The invalid, either consumptive or threatened with the complaint, should constantly, while at the watering place, take daily exercise on horseback or on a donkey, and go frequently upon the water in a sailing-boat, or make excursions along the coast in a steam-vessel whenever opportunities occur. Such opportunities are now frequent at all watering-places, and should not be neglected, as a short sea-voyage, and the occasional nausea of sea-sickness, are powerful adjuncts to sea-bathing. If exercise on horseback cause

fatigue or stiffness, or pain in the chest, the warm-bath and skin-rubbing will afford speedy relief. The same remedies will also allay any heat or irritation produced, during a water excursion, by the action of the sun, by alarm, or other nervous excitement.

In using the sea-bath for dyspepsia, if obstinate costiveness prevail, the bathing should be suspended until the bowels are free, which may generally be produced by the enema of warm water with a little soap suds, or by half a drachm of Epsom salts dissolved in a quarter of a pint of water, and taken before breakfast every morning, until the desired effect is produced. During this period, the body must be daily sponged with tepid water, containing a little vinegar or chloride of soda, and well rubbed with coarse towels and the flesh-brush, until the skin is properly excited.

Exercise is indispensable for a dyspeptic sea-bather; but it should always be taken after the cold-bath—never before. Walking exercise in the open air is the best, though it should not be continued long enough to produce fatigue. Horse exercise may likewise be occasionally and indeed frequently taken, if the bowels are in a proper state, and there is no tendency to piles. Exercise in a sailing-boat is likewise excellent; but rowing should be avoided, or if indulged in occasionally, the indulgence should be extremely limited.

I have known, when it has been inconvenient

to go to the sea-side, long-standing dyspepsia completely cured by the salt-and-water shower-bath, friction of the skin, and the warm-bath once a week; all this being, however, combined with attention to diet, not so much in nature and quality as in quantity, but avoiding all vegetables likely to cause flatulency. In some cases of dyspepsia, where flatulency is very troublesome, I have known the patient unable to bear a warm-bath, from the expansion which the heat of the water caused of the gas in the intestines. Under such circumstances, I have seen the bowels distended to such a degree that the patient fainted in the bath. Dyspeptics must therefore avoid the warm-bath when much distressed with flatulency; or bathe in water of no higher temperature than the skin. This distressing state, with proper attention to diet, will soon be removed by the cold-bath, if the patient is not too debilitated for cutaneous reaction; in which case the back, loins, and chest, and the abdomen, if it can be borne, should be rubbed every day during an hour with a large ball of flannel, and the patient take carriage or sailing exercise. The moment the skin will resent, cold-bathing should be resorted to without delay; at first only every third day, and, as the system strengthens, every second day. Generation of gas in the intestines will soon cease to be troublesome, and the luxury of a warm-bath may then be enjoyed once a week.

Persons of a gassy habit, who are generally full and replete from over-indulgence, should

duce their quantity of animal food, which has a tendency to promote the secretion of lithic acid. Their exercise should be taken after the cold-bath, and should consist of walking and running up hill if possible, so as to induce a strong action of the lungs and copious perspiration. They should walk and run at stated hours, and for a stated time, which must be gradually lengthened. When fatigued, let them return home, be well rubbed with coarse towels, and an hour after use the warm-bath of salt water, which will restore the tone to the skin, and promote perspiration at the same time. This bath should be ten degrees above the temperature of the body. On leaving it, the skin, after being rubbed with coarse towels, should undergo friction with the flesh-brush during ten minutes. From the moment that heartburn and pain in the loins have disappeared, and the bowels are free, all alkaline medicines, and indeed all medicines whatever, should be discontinued. The preservation of health and the keeping off the painful complaint should now be intrusted to two modest-looking, rosy-cheeked damsels, named TEMPERANCE and CLEANLINESS, with whom the patient should enter into a compact to attend upon him as his hand-maidens for the remainder of his life.

During the period of bathing, malt liquor and spirits should not be used by either the dyspeptic or the man of gouty habit. I consider ardent spirit, under all circumstances except a physi-

cian's prescription, to be poison to the human system, and I would with delight see it banished from every house. I have no objection to a small quantity of wine, though I consider water the best beverage. For dyspeptics and gouty persons, or for weak and sickly children or young persons, it may be formed into a tincture, which by a gentle and almost imperceptible action, insinuates its effect into the system, and has besides the merit of being tasteless or nearly so. Let a small lump of rhubarb, weighing from twelve to twenty grains, be put into a quart decanter of cold water. The latter will be coloured in a few minutes with the soluble part of the rhubarb. When a tumbler of this tincture is poured out for use, the decanter should be immediately re-filled with water, taking care to keep the tincture of the colour of Bucellas wine, or very pale sherry. This tincture should form the ordinary beverage at dinner and lunch. A small quantity of white wine may be mixed with it, if wine be required. A beverage thus constituted will prove stimulus sufficient for temperate invalids, and indeed for most persons in health, whose pursuits do not lead them to excessive fatigue and exhaustion.

With regard to malt liquor, I have a great objection to the acrid and narcotic bitter of the hop, which, far from acting as a fine stomachic bitter, as it is generally said to do, produces sickness and loss of appetite; an effect, as may every day be observed in London, more common among those who besot themselves with ale and porter.

than among drinkers to excess of alcohol in the form of gin, rum, or brandy—both being destructive of life in the long-run; the latter more rapidly, the former in a more disgusting manner.

I would have all invalid bathers, then, except under the direction of a medical man, discard the spirit-and-water mixtures with which so many of my countrymen, and even of my fair country-women, are wont to regale themselves before going to bed; and which has assuredly, in those who have taken it, contributed its share towards bringing them to that condition which necessitates their bathing in the sea to recover the health they have lost, instead of for the preservation of that which they possess.

In all other matters connected with the different baths, with the periods and manner of bathing, with the care of the skin, and with the discipline of exercise and diet, I recommend invalid bathers to follow, at least so far as they are able, the directions given in the last chapter for bathers who are not invalids.

Every sea-bather, male and female, invalid or not, should bring to the watering-place a couple of pairs of bathing slippers of leather, into which are fitted a movable pair of lamb's-wool feet, of which they should possess several changes; likewise three or four large wrappers of thick cotton, two *wrappers* of flannel, and a good quantity of coarse *towels*, not forgetting the indispensable *flesh-brush*, or its flannel substitute for delicate girls

and children. When the bather enters the machine, the attendant waiting-maid or the attendant valet should have ready, well aired and perfectly dry, a flannel wrapper, a cotton wrapper, a dry pair of lambs'-wool feet in the slippers, and the flesh-brush. The instant the bathing is over, and the bathing-dress removed, the wet body should be quickly enveloped in the cotton wrapper, and the feet wiped and put into the slipper. The operation of wiping the body should now begin, the legs first. After this wiping, which should be converted into a strong towel rubbing, the flesh-brush or flannel should be used during five minutes, and the body then enveloped in the flannel wrapper, when the dressing may be performed at leisure.

One of the most important matters at a watering-place is the choice of a medical man. A physician should become the bedside confessor of his patients. Like the friars of the middle ages, he should heal the ailments of the mind as well as those of the body. He should be the faithful depositary of family secrets, which should remain in his bosom, as in the vault bearing upon its eternally closed brazen doors the seal of Solomon the Wise. He should well study till he knows his patients and their constitution; and by means of such knowledge he should seek to prevent disease as well as to cure it, to preserve health as well as to restore it. Besides talent, he should possess blandness of manner, kindliness of disposition, fluency

speech, perspicuity in explanation, and extensive general information. He should inspire unbounded confidence, by appealing to the understanding of his patients, and, except under acute and dangerous disease, explaining to them so much as their information and previous studies enable them to understand. In short, he should be looked up to as an oracle in the family. The entire dependence placed upon his judgment, and the blind confidence that would attend every thing he directed, would operate more efficaciously in curing his patients, than the most elaborate resources of the pharmacopoeia.

To find such a man at a bathing-town on the coast would perhaps be no easy matter, though, thank God, there are many such in the kingdom. But at watering-places a number of medical men congregate, who have but little practice any where else, and therefore speculate upon the sea-bathers, to whose assistance they may be called. If a man wholly such as I have described cannot be found, the one should be selected who approaches nearest in likeness to my sketch. But there is one species of medical man, whom I should recommend all invalids, especially if they are nervous, to avoid.

The doctor of this class assumes a stern and swaggering look; affects extreme rudeness of manner, and wraps up his own ignorance in the *veil of mystery* which he throws over the practice of his profession. For he has such a tendency to empiricism, that he makes a secret of every dis-

ease he treats, of every medicine he *exhibits*, (risum teneatis, lectores?) because he disapproves of enlightening unprofessional persons, or giving any explanations to the uninitiated. He therefore acts in darkness, and under a cloud which the eye of none but an adept can penetrate. His language, which is at times brutal, is frequently unintelligible from its pedantic affectation. If there is a scratch on the finger, he calls it "an abrasion of the skin,"—if any liquid has become very thick, he will say that it is "inspissated,"—a patient afflicted with loss of speech, he terms "obmutescent,"—a refractory invalid, "a fellow full of obluctation;"—in a word, he would most probably if asked the meaning of "net-work," say with Dr. Johnson, that it is "any thing reticulated or decussated at equal distances, with interstices between the intersections." Such a man would inspire a nervous patient with dread instead of confidence, and would, in many instances, cause death, where his bland, more communicative, and kinder rival would effect a cure.

Watering-places are generally overrun with this last description of medical men, who imagine that coarseness of manner and vulgar impertinence are considered signs of genius. Because the late Mr. Abernethy sometimes indulged in certain eccentricities of manner, in which I am convinced there was not a spark of affectation nor a thought of giving offence, but which were the mere exuberance of animal impulse not under proper discipline *e men fancy, that by imitating the*

defects of this celebrated man, they sha
for possessing his talents—a sad mists

I take my leave, then, with strongly :
ing invalid sea-bathers never to sele
man who is rude and ill-mannered, and
proves of giving explanations about “
matters” to “unprofessional persons.”

THE END.

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